SOUTH MARKETING ISSUE
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Pesticide Output For June and July Reported by U.S.

12.7 Million Pounds DDT Produced in July Exceeds Output of Previous Month

WASHINGTON — Preliminary reports on production of a number of pesticidal chemicals in the U.S. for June and July, 1958, have been released by the U.S. Tariff Commission in its "Facts for Industry" series.

Production of DDT in July exceeded that of June, the report says. The respective figures were 12,722,421 lb. and 12,172,548 lb.

Output of 2,4-D likewise was greater in July. Figures for that month were 2,133,919 lb. as compared to 1,797,585 for June, 1958.

Acid esters and salts of 2,4-D were produced in greater quantity in June than in July. The latter month's total was figured at 1,247,674 lb., and for June, 1,663,680 lb.

Acid equivalent of esters and salts of 2,4-D were produced in the amount of 1,251,946 lb. in June, but only 884,965 lb. in July, 1958.

Benzene hexachloride output was greater in June than in July. In the latter month, 5,318,094 lb. were produced, as compared to 4,423,347 lb. in July. The gamma isomer content of

(Turn to PESTICIDES, page 17)

Program Announced For Range Fertility Conference in West

REDDING, CAL.—Program plans for the Western Range Fertilization Conference, to be held Oct. 27 at the Riverview Country Club here, have been announced.

The conference is under the cosponsorship of the National Plant Food Institute and the Soil Improvement Committee of the California Fertilizer Assn., with the cooperation of the California chapter of the American Society of Range Management.

Program highlights include opening remarks by Howard H. Hawkins, president of the California Fertilizer Assn.; remarks by W. R. Allstetter,

(Turn to RANGE, page 17)

Gross Income of Cotton Growers Up This Year to Improve Sales Prospects

By JOHN CIPPERLY, Croplife Washington Correspondent

WASHINGTON—The cotton situation report, issued last week by the U.S. Department of Agriculture, confirms recently-compiled figures to the effect that cotton growers' income is much improved this year as compared to last. The USDA compilation says that gross income from the 1958 cotton crop will be about $1.95 billion as compared to $1.5 billion for the 1956-57 crop.

This improved income situation for cotton should be reflected in the attitude of producers toward the purchases of both fertilizers and pesticides, it is indicated.

A shifting pattern of cotton production with a continuing decline of output in the Southeast are also reported. For the 1958 crop, Texas produced an estimated 37% of the national total. For the West, its proportion of the total crop again amounted to 23%, the same as for the previous year.

Cotton production in the Delta reversed its previous declining share of the crop.

According to USDA, the shift in pattern of production partly reflects shift in acreage distribution, caused to some extent by soil bank activities.

Probably in some major degree influenced by appropriate use of chemical products, yields to the acre in the Delta and the Southwest can be assigned as one of the chief reasons for higher gross incomes to cotton producers in these regions.

However, USDA cautions, aggre-

(Turn to COTTON PROSPECTS, page 20)

NEW ENGLAND GROUP TOLD . . .

Agricultural Changes in Past Two Decades More Profound Than Industrial Revolution

By James W. Miller
Croplife Staff

MELVIN VILLAGE, N.H.—Future prospects for the use of fertilizer in New England as influenced by the changing patterns of agriculture were surveyed at the New England Fertilizer Conference here Sept. 23-24.

One-hundred-ten fertilizer manufacturers, suppliers and representatives of New England agricultural colleges attended the meeting at the Bald Peak Colony Club on Lake Winnipesaukee.

Following the custom of having a different agricultural college responsible for the program each year, the University of Connecticut centered the day-long discussion around "Agricultural Development in a Changing Economy." W. B. Young, dean of the Connecticut College of Agriculture and A. A. Spielman, associate director of the Connecticut agricultural experiment station, presided.

The sociological aspects of the current agricultural revolution were reviewed by Dean Young and W. C. McKain, Jr., head of the department of rural sociology, University of Connecticut. The trend toward fewer farms, larger acreages, specialization, farm mechanization, sharply increased farming efficiency which has developed in the last 20 years was described as a greater revolution than the industrial revolution in the early 1800's.

Dr. McKain described the differ-

(Turn to NEW ENGLAND, page 20)

Tobacco Acreages of U.S. Heavy Users of Fertilizer, USDA Census Determines

By J. R. Adams, L. B. Nelson and D. B. Ibach

Drs. Adams and Nelson are with the Soil and Water Conservation Research Division, and Mr. Ibach with the Farm Economics Research Division, Agricultural Research Service
U.S. Department of Agriculture
Beltsville, Md.

Part VIII. Tobacco

PRACTICALLY the entire acreage of tobacco in the United States received large fertilizer applications. In 1954, 97% of its harvested acres, or 1,515,000 acres, received fertilizer at rates averaging 60 lb. N, 121 lb. available P_2O_5, and 117 lb. K_2O an acre (2). The tobacco crop, because of its limited acreage, received only 2.5% of the national consumption of N, 4.2% of the available P_2O_5, and 5.0% of the K_2O (1).

In major tobacco-growing states, however, a sizeable portion of the total fertilizer consumed may be applied on tobacco. North Carolina in 1954, for example, applied about 17% of its total N, 28% of its P_2O_5, and 26% of its K_2O on tobaccco, although its acreage amounted to only 10% of the state's total crop and cropland pasture acreage.

Comparison of the 1954 data with those from surveys made in 1947 and 1950 indicates that the percentage of the tobacco acreage fertilized has remained consistently at around 97%. A trend seems to be developing in all tobacco growing regions toward heavier fertilization with N and K_2O. The United States estimates showed average application rates of 49, 41, and 60 lb. N to the fertilized acre and 76, 71, and 117 lb. K_2O an acre for 1947, 1950, and 1954, respectively (2).

Percentage of acreage fertilized and rates of nutrient application are given in Table 1 and by the maps in Figures 1, 2, 3, and 4.

Figure 1 shows that, with the exception of the Middle and Lower

(Turn to TOBACCO USE, page 18)

Smith-Douglass Co. Notes Possible Merger

NORFOLK, VA.—Willard R. Ashburn, president of Smith-Douglass Co., Inc., here, announced that Smith-Douglass and the stockholders of Wilson & Toomer Co. are exploring the possibility of a merger. The latter is a fertilizer manufacturer in Georgia and Florida, with headquarters in Jacksonville, Fla.

Smith-Douglass' mixed fertilizer plants are located in Virginia, North Carolina, Illinois, Minnesota and Texas.

Justin Potter Named to Head Virginia-Carolina

RICHMOND, VA. — Justin Potter was named president of Virginia-Carolina Chemical Corp. at a meeting of the corporation's board of directors Sept. 26. He succeeds William H. Wilson, who resigned. Mr. Wilson will remain a consultant to and a director of V-C, however, although his full-time plans have not yet been announced.

Mr. Potter, chairman of the board and the firm's largest stockholder, was made chief executive officer upon Mr. Wilson's resignation on the eve of the firm's annual meeting, and was named president when the board met.

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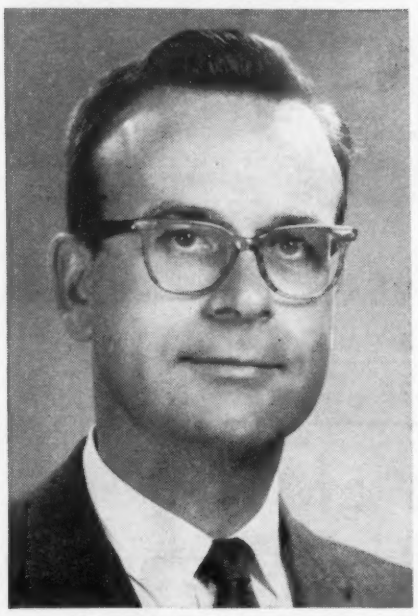


Louis L. Funk

Commercial Solvents Names Louis L. Funk to Sales Post

NEW YORK — Commercial Solvents Corp. has named Louis L. Funk of Indianapolis, Ind., to its agricultural chemicals marketing and distribution organization in the midwest, according to C. T. Marshall, sales manager for CSC's agricultural chemicals department.

Mr. Funk's sales responsibilities will be in Indiana, Michigan and northern Ohio. His headquarters will be at the company's Cincinnati district office. He is a graduate of Purdue University majoring in agriculture. Mr. Funk was associated with a seed company for several years and operated his own chemical and supply company for three years prior to joining Commercial Solvents.

Fiscal Fertilizer Sales For Arkansas Reported

LITTLE ROCK, ARK.—The grand total fertilizer sales in Arkansas during the fiscal year, July 1, 1957 through June 30, 1958, were 289,650 tons, reported the Arkansas State Plant Board.

Material sales totaled 149,852 tons and mixed fertilizers sold 139,798 tons.

Most popular materials were ammonium nitrate with 41,733 tons, nitrate of soda with 25,376 tons and muriate of potash with 23,411 tons.

Mixed grades 5-10-5 with 30,377 tons and 10-20-10 with 22,981 tons were the most popular mixtures.

Stauffer to Build Eptam Herbicide Plant

RICHMOND, CAL. — Stauffer Chemical Co. has completed plans to build a plant to produce the selective herbicide, Eptam, on a commercial scale. Construction of the new unit, at Richmond, Cal., will begin immediately. It is anticipated that the multi-million pound facility will be on stream by January, 1959.

Eptam (ethyl di-n-propylthiolcarbamate [E.P.T.C.]) was developed by Stauffer's research laboratories in 1955. During the past three seasons it has been made successively in laboratory, pilot plant, and semi-commercial quantities. The herbicide has been evaluated in both greenhouse and field tests under a variety of conditions both in the U.S. and in a number of foreign countries, the company said.

Meanwhile at Henderson, Nevada, Stauffer has doubled its capacity to produce Trithion. The new increase in throughput capacity has been effected, according to the company, by the installation of additional reactors at the Henderson plant and the development of process innovations for the manufacture of both the finished product and feedstock intermediates.

Trithion (O, O-diethyl S-p-chlorophenylthiomethyl phosphorodithioate) is a non-systemic residual compound which is effective against a wide range of insects.

Vulcan to Open Steel Pail Production Plant in Canada

BELLWOOD, ILL. — A plant to produce steel shipping pails will begin production in early November, in Vancouver, British Columbia, Canada. The Vulcan plant is the first steel pail manufacturing facility in Canada's Pacific coast area, according to a joint announcement by Vern I. McCarthy, president, Vulcan Containers Inc., and Norman G. Bernecker, president, Vulcan Containers Ltd., Toronto.

Increasing demand by container users prompted Vulcan, Canada, to produce containers in Vancouver. "We will tailor our production directly to the requirements of western Canadian industry," said Mr. McCarthy and Mr. Bernecker.

Mr. Bernecker stated that production machinery is now being installed in a recently acquired one-story building of 10,000 sq. ft.

AAFCO's States Relations Committee Announces Plans for Oct. 16 Meeting

WASHINGTON — The Association of American Fertilizer Control Officials will hold a meeting of its States Relations Committee at the Shoreham Hotel here, Oct. 16, announced Vincent Sauchelli, chemical technologist for the National Plant Food Institute.

Industry members and control officials will be in attendance, Dr. Sauchelli said, and topics for the evening session were submitted in advance by fertilizer industry representatives and state regulatory officials.

According to Dr. Sauchelli, the meeting was originally established to provide control officials and others a chance to discuss mutual problems. The committee acts as a liaison between the association and regulatory officials.

Topics which are included in the evening's agenda deal with "How Should Customer or Buyer's Mixtures Be Regulated Under Fertilizer Laws?"; "Should Provisions Be Made in the Model Fertilizer Bill for Potential Acidity and Basicity to Be Expressed in Terms of Either Pounds or Percentage of Calcium Carbonate?"; "Is It the Manufacturer's Responsibility to Offer Only Fertilizers of Such Uniformity That a Representative Sample May Be Drawn by AOAC Procedures?, For Bag Fertilizer?, For Bulk Fertilizer?"

"Should Control Officials Prohibit the Claim and Guarantee of Generally Recognized Plant Food Elements Because Response to Use in Their States Has Not Been Observed by Experiment Station Authorities?"; "How Should Control Officials Regulate Fertilizers Which Carry Claims for Additives, Which May Be Beneficial But Are Not Essential for Plant Growth, for Example, Chelating Agents, Wetting Agents, Bacterial Cultures, Enzymes, etc.?"; "How Can We Clarify Terminology of Nitrogen-Phosphorus Products Now on the Fertilizer Market?"; "How Should Control Officials Regulate Dried Animal Manures Which Contain a High Percentage of Sand and Inert Matter?"; and "Is It Our Responsibility to Govern the Safe Handling of Anhydrous Ammonia During Shipment, Storage and Distribution?"

Dr. Sauchelli represents NPFI on the committee which is headed by Maurice B. Rowe, Virginia Department of Agriculture.

Missouri Field Day Presents Variety Of Chemical Studies

SIKESTON, MO.—A field day was held at the Southeast Missouri Research Center here and at fields in nearby counties Sept. 10-11. According to Center spokesmen, a wide variety of studies involving agricultural chemicals were presented.

The spokesmen said studies are being made in connection with corn, cotton, soybeans, vegetables, small grains and pastures. The corn experiments include tests on fertility, insect control and corn variety.

Cotton studies involving agricultural chemicals are under way in weed control, insect control, soil fumigation and fertility fields. Also being studied are time and method of application, soil test correlation, source of nitrogen and the role of lime in cotton fertilization.

Fertility studies also are being made with soybeans and small grains, with results to be tabulated as soon as harvest is completed.

In an experiment dealing with the effect of gibberellic acid on cotton fruiting, preliminary results indicate that the use of this chemical will cause the plant to retain 30 to 40% more squares, the researchers said. However, a more practical method of application is needed since the spraying of the entire plant with the chemical produces erratic growth. Such growth increases harvesting difficulty, especially with mechanical pickers, they continued.

The researchers say that cotton seedling disease control is very important in this area of the cotton belt. The growing season is relatively short, and if the farmer loses a stand to seedling diseases, he may not have time to replant a crop that will mature before frost.

Experiments have been conducted the past four years with different fungicides for control of seedling diseases. Materials ordinarily used for seed treatment have been used with the in-furrow method of application with good results. The researchers feel a better method of applying materials in dust form is needed, however.

Research Center experiments also show the nematode-fusarium wilt complex can be controlled chemically. Applications that were most successful were applied with a soil chisel making certain the furrow was closed. This procedure was effective on cotton, and the production of some truck crops was increased significantly when nematodes were controlled by this method, they concluded.

Soil Fertility Course Set for Baldwin College

TIFTON, GA.—A "Soil Fertility" short course will be presented in the auditorium of Abraham Baldwin College here on Oct. 9, announced T. M. Cordell, dean of the school.

The program is under the joint sponsorship of the college, the Georgia Coastal Plain Experiment Station, the Georgia Agricultural Extension Service and the Georgia Plant Food Educational Society.

Included in the day's program is a discussion on "The Ten Year Goals," to be presented by Ralph Johnson, agronomist-project leader. S. A. Parham and Frank McGill, agronomists, will talk on "Wheat Is Being Done?"

A panel discussion will look at "Why the 1957-58 Soil Fertility Program Was Successful." Another panel discussion follows, taking up the subject, "How It Was Done."

The remainder of the day will be taken up with talks by Otis Turner, farmer; Larry Torrance, county agent; Jim Bergeaux, extension agronomist-fertilizer; and Ralph Wehunt, extension agronomist-soils and fertilizers.

Edward R. Schumann

Edward R. Schumann Named To NPFI St. Paul District

WASHINGTON—Edward R. Schumann became a district representative of the National Plant Food Institute, with offices at St. Paul, Minn., effective Oct. 1, Dr. Russell Coleman, executive vice president, announced.

A graduate of the University of Illinois college of agriculture where he received his bachelor of science degree in 1954 and his master of science degree in agronomy in 1956, Mr. Schumann will work in Minnesota, North Dakota, South Dakota and Wisconsin. He will report to Zenas H. Beers, midwest regional director, whose offices are in Chicago, Ill.

In announcing the appointment, Dr. Coleman said, "Mr. Schumann's employment, which brings our field staff to full strength in the midwest, will enable the midwestern office to expand and intensify its efforts on the Institute's program of research and education."

Mr. Schumann entered the University of Illinois college of agriculture in 1950, majoring in agronomy and soil fertility. During his senior year, he won the Bryon Reardon scholarship for an essay on soil conservation. His master's thesis was entitled "Movement of Nitrate Ions in Relation to Mass Flow of Soil Water."

Following completion of scholastic work at Illinois, he served two years with the U.S. Army Chemical Corps where he was associated with the Crops Division at the Biological Warfare Laboratories, Fort Dedrick, Md. He worked on field surveys and fertility maintenance, soil sampling, analysis, lime and fertilizer recommendations and field trial projects involving, primarily, various fertilizer treatments.

Urea Producing Facilities Added to Lawrence Plant

LAWRENCE, KANSAS—Facilities for production of urea nitrate will be installed this year at the fertilizer plant of the Cooperative Farm Chemicals Assn. here, announced R. R. Zurbuchen, general manager.

The new unit will have the capacity to produce about 28,000 tons a year and will cost about $1 million to build, Mr. Zurbuchen said.

Last summer, plans for enlarging the anhydrous ammonia facilities at the plant were announced.

The new urea unit will be in operation by Sept. 1, 1959, Mr. Zurbuchen said.

APPOINTS REPRESENTATIVE

ALMEDA, TEXAS — Retzloff Chemical Co., Almeda, has announced the appointment of Servando Trevino as international sales and technical service representative for Mexico. He will make his residence in Mexico City where the offices of Quimica Retzloff, S.A. are located.

Predicts Borate Production To Double in Next 10 Years

LOS ANGELES—New discoveries stemming from boron research and new products resulting from these discoveries have doubled production of borates in the U.S. within the past 10 years, according to J. F. Corkill, vice president and general manager of the U.S. Borax & Chemical Corp's. Pacific Coast Borax Co. division.

In a speech made at the American Mining Convention in San Francisco, Mr. Corkill predicted that growing demand for boron products will cause production to double again within the next 10 years.

"Stepped up research in boron chemistry plus a gradual rise in the world standard of living may well bring about increased demand for boron," he declared.

Northeastern Weed Group Announces Meeting Plans

NEW YORK—The 13th Annual Meeting of the Northeastern Weed Control Conference will be held Jan. 7-9, 1959, at the Hotel New Yorker here, according to E. R. Marshall, chairman of the Conference's public relations committee.

The conference will be of interest to those concerned with the various phases of weed and brush control, Mr. Marshall said. Representatives from research in college, industry and government, extension workers, nurserymen, and public health and public utility workers will be present to hear papers on many aspects of weed and brush control, he said.

Giannini Foundation Reports, Reprints Now Available

BERKELEY, CAL.—The following reports and reprints of the University of California Giannini Foundation of Agricultural Economics are available through the Foundation at Berkeley, Cal.:

1. Farm Technology and the Race with Population (Giannini Foundation Paper No. 162. Reprinted from Journal of Farm Economics, Vol. 39, No. 4, Nov. 1957).

2. Better Basic Data for Agriculture: Some Possible Approaches (Giannini Foundation Paper No. 166. Reprinted from Journal of Farm Economics, Vol. XL, No. 2, May 1958).

3. Agricultural Producers and Their Changing Markets (Speech made at annual meeting of Poultrymen's Cooperative Assn. of Southern California, Pomona, Cal., May 28, 1958, by Collins).

4. Economic Development of the Western Range Resources Supplement 2. An inventory of research compiled for the Western Agricultural Economics Research Council, June, 1958. Original bibliography and Supplement 1 issued by Montana State College, Bozeman, Mont., January 1952, and April 1953.

5. Adapting Market Organization to Changing Requirements (July 11, 1958. By DeLoach.)

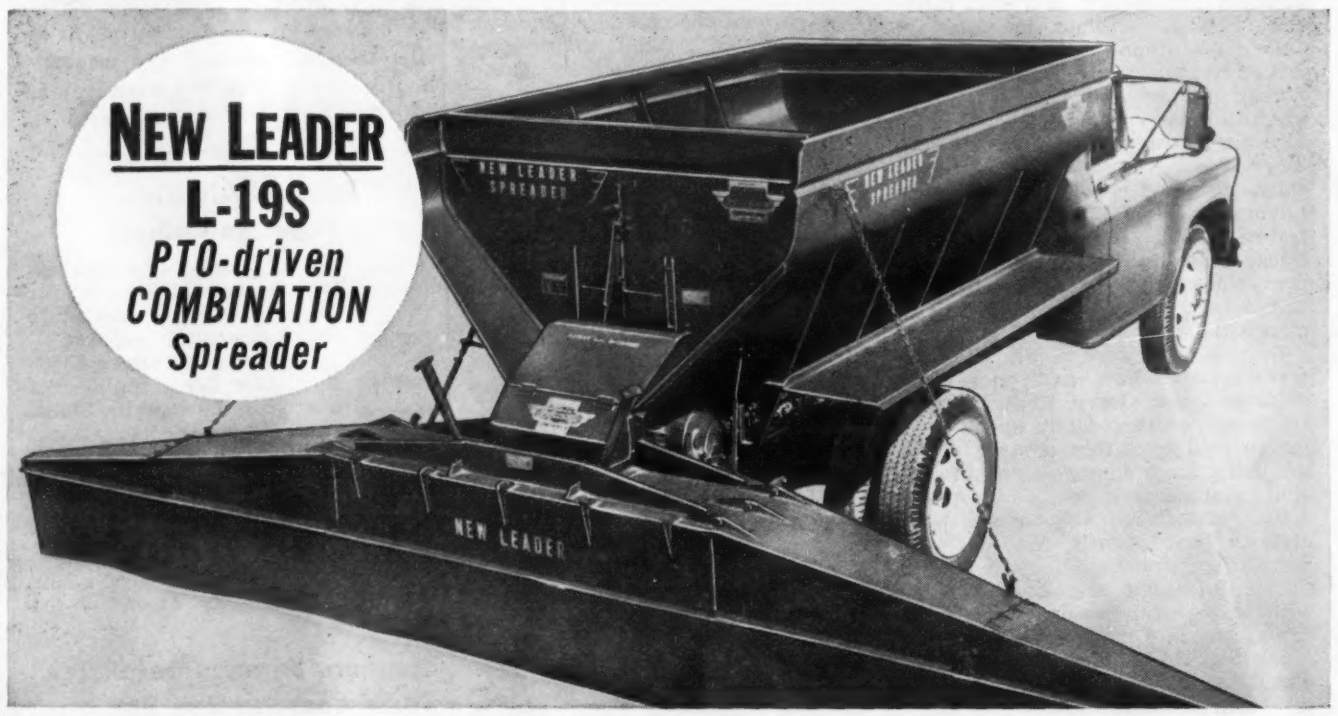
6. Optimum Water Resource Development: A Preliminary Statement of Methodology for Quantitative Analysis (Giannini Foundation Mimeographed Report No. 206. July, 1958.)

7. Sacramento Valley Rice Farms (Giannini Foundation Mimeographed Report No. 207. July, 1958.)

RETIRES FROM ATLAS

WILMINGTON, DEL.—James R. Frorer, a vice president and director of Atlas Powder Co., retired recently, but will continue to serve on the board of directors. Mr. Frorer, who has completed more than 38 years of service with the company, played a key role in developing markets for Atlas' chemical products after the company's entry into the chemicals field in the early 1930's.

HOUSEWARMING GIFT—Thomas M. Ware, right, president of International Minerals & Chemical Corp., received a Cloisonne vase as a housewarming gift from Mitsubishi Shoji Kaisha, Ltd., Tokyo, Japan, on the occasion of IMC's recent opening of its new administrative and research center at Skokie, Ill. At the left is B. Tannabe, president of Mitsubishi, who made the presentation to Mr. Ware. The Japanese firm is an importer of phosphate.



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NEB., Lincoln—Agrifirst Chemical Co.
NEV., Lovelock—Lovelock Welding
N. Y., North Collins—Schmitz Sales & Serv.
New York City, Poughkeepsie and Westbury, L. I.—H. O. Penn Mach. Co.
N. C., Raleigh—O. H. Stanard
OHIO, Columbus—Schodorf Truck Body & Equip.
Damascus—D. L. Phillips
Orrville—Orran Hofstetter
Toledo—Riedy-Manner Truck Equip. Corp.
PA., Annville—Annville Body Co.
Waynesburg—Ira D. Haines
TENN., Donelson—Tennessee Dist. Co.
UTAH, Murray—Oscar Bennion
W. VA., Buckhannon—Farmers' Truck & Impl. Co.
WIS., Rice Lake—Ostrom-Johnson Co.
Sun Prairie—Brooks Industrial Sales
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Quebec, Montreal—General Supply Co., of Canada

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INSECT, PLANT DISEASE NOTES

Entomologist Notes Serious Screwworm Damage in New Mexico

STATE COLLEGE, N.M.—Screwworms (Callitroga sp.) are a serious problem on recently branded calves in Harding, Union, and Colfax counties. Few infestations in sheep in Guadalupe County. They have also been a minor problem infesting horses in Otero County.

Alfalfa caterpillars (Colias philodice eurytheme) averaged from 2 to 3 per 10 sweeps near Bethel and Portales, Roosevelt County, and near Lovington, Lea County. Lighter infestations were found in Chaves, De Baca, Otero and Quay counties. Recent rains appear to have reduced threatening populations near Hagerman and Dexter, Chaves County.

Southwestern corn borers (Zeadiatraea grandiosella) are in most corn fields in Quay, Curry, Roosevelt and De Baca counties. Many had 2 or 3 larvae feeding within a stalk. They are doing some damage to grain sorghum planted near corn.

False chinch bug (Nysius sp.) populations have greatly reduced with ripening of grain sorghum in Quay, Curry, Roosevelt and Lea counties, with only an occasional report of damage on late plantings.

Spotted alfalfa aphids (Theriophis maculata) appear to be building up in alfalfa in Roosevelt and Lea counties.

Corn earworms (Heliothus zea) in the majority of fields in Quay, De Baca, Curry and Roosevelt counties average almost 100% infested ears.

The beet webworm (Loxostege sticticalio) has damaged young wheat fields near Ft. Sumner, De Baca County, and House, Quay County. Also has done some damage to alfalfa fields surrounded by rangeland.

Grasshoppers are causing minor damage to grain sorghum heads near Tucumcari, Quay County. Light infestations are damging alfalfa and small grains in Taos County.

Orchard mites (Tetranychus sp.) have very few adults feeding on foliage in De Baca County. Most areas report they are in webbing at the base of the apple trees.

Corn earworm (Heliothus zea) are generally light in lettuce fields in Chaves, Dona Ana and Eddy counties.

Cabbage loopers (Trichoplusia ni) are damaging lettuce in Dona Ana and Eddy counties.

Heavy infestations of beet armyworms (Laphygma exigua) are damaging peas and beans near Weber City, Curry County. Are also moving into young wheat fields in this area. —John J. Dunkin.

Operation Screwworm Starts At Florida Air Force Base

EGLIN AIR FORCE BASE, FLA. —An intensive screwworm eradication program is under way at Eglin Air Force Base and all of northwest Florida, according to an announcement by J. C. Pruitt, range engineer of the Range and Facilities Division, deputy chief of staff for operations.

A small Cessna aircraft leased by the U.S. Department of Agriculture is releasing millions of sterile screwworm flies over Eglin AFB on Monday, Wednesday and Saturday of each week, he said.

The program to eliminate the parasite, which is estimated to cause $20 million worth of damage to Florida cattle each year, is the result of several years of research by the USDA and the Florida Livestock Board. At Sebring, Fla., a fly hatchery has been set up which produces 50 million sterile flies a week. The flies are sterilized through the use of cobalt-60 in an early stage of development, but when released contain no radiation active elements.

By releasing the sterile flies, it is estimated that the parasite can be eliminated from Florida within two or three years.

The last known screwworm infestation on Eglin AFB was noted four years ago, according to Mr. Pruitt, when one doe deer was found to be infected. At that time, several dead animals were found that showed evidence of the worm.

About four weeks ago a dog shipped from Miami to De Funiak Springs was found to be infected with the parasite.

All of northwest Florida and parts of Georgia and Alabama are receiving sterile flies from the USDA station in Ocala, Fla., Mr. Pruitt said.

USDA Aids California's Pink Bollworm Battle With 60 Black Light Traps

SACRAMENTO—The U.S. Department of Agriculture is sending 60 black light insect traps to assist the California Department of Agriculture in its program to detect pink bollworm of cotton, a pest recently discovered in Maricopa County, Ariz.

The California department intends to take all steps necessary to prevent the introduction of the pest in this state.

Robert W. Harper, chief of the department's Bureau of Entomology, in a report to the State Board of Agriculture, said the black light traps are rated as highly effective in attracting and capturing night flying pink bollworm moths. Batteries of ten traps each will be placed in operation for three months in the Blythe, Bard, El Centro and Coachella desert cotton growing areas. The remaining traps will be placed in the counties of Kern, Tulare, Kings, Fresno, Madera and Merced.

As an added precaution the California department will utilize gin trash machines in making routine inspections of gin trash in all California cotton producing counties. State and federal entomologists also will check on all cotton gins equipped with lint cleaners to detect pink bollworm larvae which might be collected.

As the cotton growing season comes to a close, the California department and county agricultural commissioners will collect and examine green cotton bolls from representative plantings throughout the state. The bolls will be scrutinized to detect the presence of cotton pests.

Insects Continue Evil Ways in Arizona Cotton

TUCSON, ARIZ. — Cotton picking is underway in most areas of Arizona now, but insects continue to cause damage in many fields.

Insects causing the greatest damage, generally speaking, are cotton bollworms, salt marsh caterpillars, beet armyworms, leaf perforators, loopers and stink bugs.

In some fields, Lygus continues to be a problem, especially where squaring is heavy.

Stink bugs, bollworms, beet armyworms and Lygus still can injure cotton plants, and Arizona farmers and ranchers are urged to continue checking their fields regularly.

Airplane sprays should not be applied during these hot months between the hours of 10 a.m. and 4 p.m.

If sprays are applied when temperatures are well above 90° F., very little of the insecticide will reach the plants, since the air currents between 10 a.m. and 4 p.m. will cause the insecticide to rise.

Farmers are also urged to remember that all skip-row cotton should be treated on a gross acreage, not net acreage, basis.—J. N. Roney.

NEW INSECT COURSE

LUBBOCK, TEXAS—Texas Technological University has become the second school in Texas to offer courses leading to a degree in entomology. The applied portion of the entomology courses will be taught by Dr. Donald Ashdown, who was formerly on the Cornell University and Oklahoma State University faculties.

First Spotted Alfalfa Aphid Found in Oregon

PORTLAND, ORE. — Spotted alfalfa aphid has been discovered for the first time in Oregon, the state department of agriculture reports.

It has been found in western Umatilla County after doing millions of dollars worth of damage in Idaho, California and Nevada.

The discovery was made after farmers in the Echo area complained to Herman Bierman, Umatilla County agent, that large yellow areas have appeared in their alfalfa fields.

The department has ordered a survey to determine the extent of the pest.

Southern Farmers Defoliate To Discourage Boll Rot

MEMPHIS, TENN. — Many farmers in the mid-South turned to defoliation the last days of September in order to get sunshine into their cotton and speed the opening of bolls.

The sunshine followed 10 days or so of steady rain which caused flooding in many areas. Such rain, coupled with generally excessive moisture conditions for the past month, has caused rank growth in cotton, and this rank growth increased the development of boll rot. Also encouraging the farmers to use defoliants is the discovery in many fields that the wet, warm weather brought the year's greatest boll weevil activity and that mature bolls are being punctured.

Farmers are trying to salvage cotton that has opened to prevent it from damaging other cotton, extension officials in Arkansas, Mississippi, Missouri, and Tennessee report. Because of the rains, some of the cotton is sprouting seeds in the boll, causing the cotton to lose value. Farmers are hoping to get this cotton picked before other bolls open.

Damage to Mississippi crops from the rains is widespread, with Delta cotton, soybeans, and milo bearing the brunt of the losses. Early planted oats and other small grains also were damaged in low land areas. Also fall army worms are causing damage to these crops in many parts of the state.

Rainy weather slowed cotton picking activities in Arkansas. Rice combining is well under way, along with the harvest of sweet sorghum for silage and syrup. Rains have helped fall seeding of small grains in West Tennessee, but have done some damage to cotton.

Revision of Insect Manual Shows 30-Year Changes

BERKELEY, CAL.—Western agriculture is holding its own against insect enemies thanks to more and better controls, crop protection services, and a growing public interest.

That's the outlook of Edward O. Essig, professor of entomology and parasitology, emeritus, at the University of California, who recently completed a new revision of his 32-year-old standard reference work on western pests: "Insects and Mites of Western North America."

First published in 1926 as "Insects of Western North America," the book still carries the original subtitle: "A Manual Textbook for Students in Colleges and Universities and a Handbook for County, State, and Federal Entomologists and Agriculturists as Well as for Foresters, Farmers, Gardeners, Travelers, and Students of Nature"—in other words, just about everyone with an interest in insects.

The author-entomologist has added 100 new species in the 1958 edition extending the book's total coverage to 6,317 species, many illustrated by photographs and drawings. Data on control measures and insecticides and new information on older insects that have become important as crop pests since 1926 has been added.

Corn Earworm Deserts Home; Heads for Colorado Crops

FORT COLLINS, COLO.—According to the Colorado Insect Detection Committee, the heaviest mid-September infestation of tomato fruitworms (or corn earworm) in four years occurred in Bent, Crowley, Otero and Pueblo counties.

The committee reported that egg counts have increased from 0.7 to 1.5 eggs per 100 leaves in these counties.

The insect has moved from nearby corn fields to the tomato plants and commercial growers feel the infestation is heavy enough to be of considerable concern.

In Weld County, a moderate infestation of the potato tuber moth has appeared and a third brood of sugar beet webworm has been reported in Weld and Larimer counties.

New England Christmas Trees Must Pass USDA Test Before Shipping South

WASHINGTON — Christmas trees and evergreen boughs grown in New England and eastern New York areas infested with the gypsy moth, a destructive forest pest, must be inspected and certified before being shipped southward and westward, the U.S. Department of Agriculture reminded dealers and the public recently.

The area generally infested by the gypsy moth comprises Connecticut, Rhode Island, Massachusetts, most of New Hampshire and Vermont, and numerous counties in Maine and eastern New York. The certification requirements apply to shipments to all destinations outside the infested area. Certification is also required for shipments to the 10-county area in southern New York where eradication sprays have been applied, and which is still under gypsy-moth quarantine.

The leaf-chewing gypsy moth caterpillars each year destroy shade and forest trees worth thousands of dollars, and if permitted to spread over a wider area could do many millions of dollars worth of damage. Buff-colored egg clusters of the gypsy moth, over-wintering on Christmas trees and evergreen boughs shipped out of infested areas, could spread the pest to new locations.

USDA asks motorists not to take evergreens outside quarantined areas. Christmas tree shippers are urged to secure certification of trees and greens at loading points, where this can be done with a minimum of delay.

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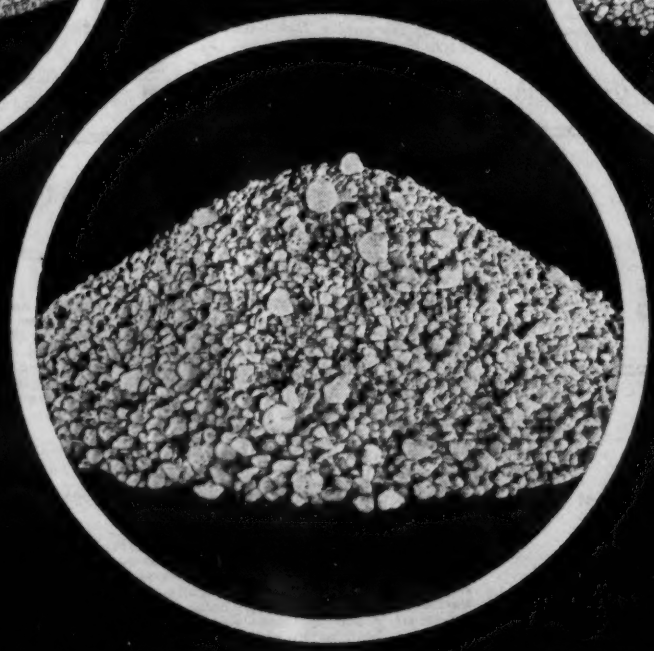

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2,853,415

Fungicidal Compositions and Methods Employing 1,2-Dibromo-1,1,2,2-Tetrachloroethane. Patent issued Sept. 23, 1958, to Christopher Edward Douglas Smith, Bracknell, and William Allenby Wynne, Widnes, England, assignors to Imperial Chemical Industries Ltd., London, England. A water-dispersible fungicidal powder comprising 1,2-dibrom-1,1,2,2-tetrachloroethane in a fungicidally effective amount in intimate association with a diluent and a water-soluble dispersing agent.

2,853,417

Method of Controlling Plant Pests with an Iodine Adduct of a Copolymer of N-Vinyl Pyrrolidone and Polymerizable Vinyl Compound Containing One Aliphatic Double Bond. Patent issued to Jesse Werner, Hollis-wood, N.Y., and Frederick A. Hessel, Upper Montclair, N.J., and Daniel B. Witwer, Montclair, N.J., assignors to General Aniline & Film Corp., New York, N.Y. A method of protecting chlorophyllaceous plant material subject to attack by plant pests which comprises applying to said material a pesticidal amount of an iodine complex of a copolymer of 10 to 90% by weight of N-vinyl pyrrolidone and 90-10% by weight of a polymerizable vinyl compound containing one aliphatic double bond, the available iodine content of said complex ranging from 0.1 to 25% by weight.

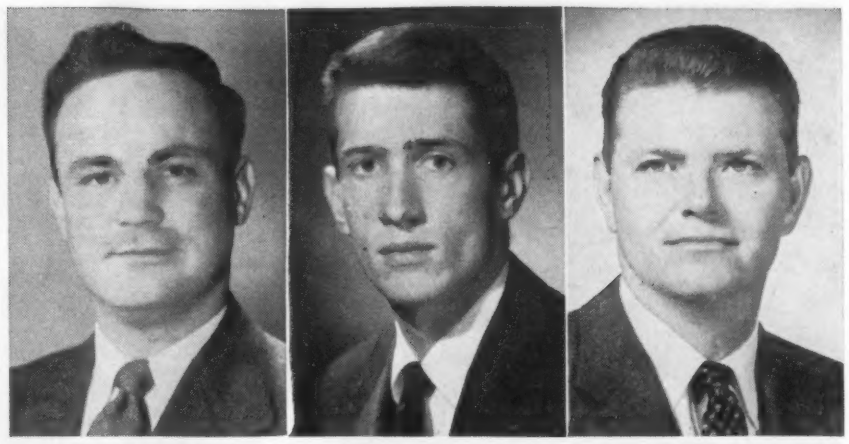
2,853,416

Method of Protecting Plants by Applying a Pesticidal Amount of a Polyvinylpyrrolidone - Iodine Adduct. Patent issued Sept. 23, 1958 to Henry B. Kellog, Tenafly, N.J., assignor to General Aniline & Film Corp., New York, N.Y. A method of protecting chlorophyllaceous plant material subject to attack by plant pests which comprises applying to said material a pesticidal amount of polymeric N-vinyl-2-pyrrolidone-iodine adduct containing from 2-25% available iodine and a carrier therefor.

Industry Trade Marks

.The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Spensol Greeen, in capital letters, for nitrogen solution—namely a solution of ammonium nitrate in ammonium liquor for use in the manufacture of fertilizer. First use Jan. 27, 1958, by Spencer Chemical Co., Kansas City, Mo.



J. R. Wheatley J. D. Mueller T. P. Finn

THREE TRANSFERS—Three transfers of Crag Agricultural Chemicals sales representatives have been announced by Union Carbide Chemicals Co., Division of Union Carbide Corp. J. R. Wheatley has moved to Memphis, Tenn., and will call on pesticide formulators and experiment stations in the Mississippi Delta. J. D. Mueller will move to Yakima, Wash., to service the northwest area. T. P. Finn will transfer to Grand Rapids, Mich., to cover the north central fruit belt. The realignment of field responsibilities is in anticipation of a major marketing and development program for the company's new Sevin insecticide, a spokesman said.

Corn Leaf Aphid Causes Problem in Ohio Corn Fields

WOOSTER, OHIO—For the second consecutive year, an ordinarily minor insect pest has posed a major threat to the Ohio corn crop. "The corn leaf aphid, a pale green plant louse, is present in limited numbers in Ohio corn fields every year, but usually causes no more than token injury," says Dr. C. A. Triplehorn, entomologist at the Ohio Agricultural Experiment station in Wooster.

"Occasionally, these aphids multiply rapidly if conditions are right, causing a whitening of the tassels and dry areas to appear on the leaf sheaths and ears. If aphids are numerous enough, ears may be stunted or stalks may even be barren," Dr. Triplehorn adds.

This season in Putnam, Sandusky and Huron counties, and possibly in other areas, infestations by major aphid colonies ran as high as 60% in some fields.

"They quickly came, and quickly went," Dr. Triplehorn said, "and we checked fields one week, found heavy infestations, checked the next week, and discovered that they had disappeared. Where they had gone is anybody's guess."

The insect apparently does not overwinter in Ohio but infestations reputedly are started each year by aphids air-borne from southern states, he said.

Farmers who planted corn varieties known to be resistant to the corn borer are gaining double-barreled protection since many of these same hybrids also are resistant to the aphid.

Insect observers always have considered hot, dry growing seasons to be most favorable to the aphid, yet both 1957, a dry year, and 1958, a wet year, have been about equally heavy infestations, Dr. Triplehorn continued.

The most conspicuous difference between the two years was this: In 1957, the aphid plus dry weather unquestionably reduced the yield of infested fields, while in 1958, with an abundance of moisture, the most heavily infested fields recovered, he said.

Why this insect should suddenly become such an important pest and why its principal damage should be confined to restricted areas are among problems being investigated.

GARDEN AND FARM STORE

EXETER, CAL.—A new garden and farm supplies store opened here recently at 272 Ave. and Belmont. Owned by John C. Kazanjian, the store handles a complete line of gardening products including fertilizers, chemicals and seeds.

Books on Pesticides

WEEDS—Second Edition (1955)
W. C. Muenscher

Entire book has been revised and reset, with descriptions of seventy weeds added to the original list of five hundred, plus twelve new full-page plates depicting nineteen kinds. Keys and full descriptions provided for identification with detailed illustrations of 331. Types and sources of weeds, their means of reproduction and dissemination, and the amount of damage they inflict on crops. Specific directions for control, with reference to chemical methods of recent discovery $10.00

CHEMICAL BUSINESS HANDBOOK
Dr. John H. Perry

1,380 double column pages, the equivalent of several average books; 700 illustrations, by 124 contributors. Market research data section is 280 pages, business mathematics 200 pages, financial and accounting 142 pages, research and development 150 pages, sales and advertising 92 pages, twenty sections in all. The book deals with chemical management problems and is useful to technical men, engineers and executives, in the chemical and allied fields. Dr. Perry is editor of the Chemical Engineers Handbook, a companion publication $17.00

INSECT PESTS OF FARM, GARDEN and ORCHARD Fifth Edition (1956)
Leonard M. Peairs and Ralph H. Davidson

A standard text for 44 years. Includes insects affecting grasses, grains, cotton, legumes, vegetables, flowers, fruits, stored products, household goods and domestic animals. Contains a new chapter on insecticide formulations, spray mixtures, application equipment, etc. Material on forty new pest species added, including drastic changes in the illustration. 661 pages $8.50

DDT and NEWER PERSISTENT INSECTICIDES
T. F. West and G. A. Campbell

The first and major part of book is devoted to the physical and chemical properties, manufacture, formulation and applications of DDT. The second part deals with other chlorinated hydrocarbons whose insecticidal properties have been discovered recently and compares these new insecticides with DDT. The preparation of aqueous suspensions, solutions, emulsions, and dusts containing DDT, the compatability of DDT with other insecticides, fungicides and additions are covered in detail. Contains dozens of tables on the solubility of DDT in various solvents, the catalytic activity of accessory substances in the presence of DDT, analogues of DDT, the comparative toxicity, hydrolysis and solubility of DDT analogues, the toxicity of DDT for almost all important insects, etc. Many illustrations $8.50

APPLIED ENTOMOLOGY—Fifth Edition
H. T. Fernald and Harold H. Shepard

This text since 1921 has had an outstanding record of usefulness. The Fifth Edition preserves the general organization and coverage, with changes to improve the presentation and to incorporate new knowledge. Contains chapters on anatomy, physiology and development. The economic importance and control of insects are discussed in a general way with much attention to insecticides. The classification of insects is emphasized, with examples drawn from species conspicuous for being very harmful or decidedly beneficial. Specific control measure included for injurious forms. Last chapter considers other pest animals closely related to insects. 388 pages $7.00

DISEASES OF FIELD CROPS—Second Edition (1956)
James G. Dickson, Professor Plant Pathology, University of Wisconsin

Covers the diseases of cereals, grasses, legumes and fiber plants, which are the major food, feed and fiber sources throughout the world. More than 60 diseases incited by viruses, 40 by bacteria and 300 by fungi are listed and discussed in relation to field crop plants. Identification and information basic to its control, with emphasis on the problems of crop rotation, adaptation and the use of disease resistant varieties. This revised edition includes several new diseases, new illustrations and much recent research in the field $9.00

THE GARDENER'S BUG BOOK (1956)
Dr. Cynthia Westcott

The Complete Handbook of Garden Pests and their control. Information, scientifically accurate but easy to read on 1,100 insects, mites and other animal pests that attack trees, shrubs, vines, lawns, flowers, fruits and vegetables in home gardens. Illustrations in full color. Control measures combine the latest in chemical developments with time-honored cultural measures. Helpful to all who serve the general public and to truck farmers and fruit gardeners. 579 pages, cloth bound $7.50

THE CHEMISTRY AND ACTION OF INSECTICIDES
Harold H. Shepard, Entomologist, U.S. Department of Agriculture, formerly Associate Professor of Insect Toxicology, Cornell University.

Treats the chemistry of insecticides, the history of their use, their commercial importance here and abroad, the nature of the major uses, the influence of environment on effectiveness. Materials are arranged according to their chemical relationships. Two chapters relating to organic compounds largely new as insecticides. Illustrative data in form of tables, and a convenient appendix of equivalents arranged for practical use in the field. 504 pages..... $8.00

WEED CONTROL
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INSECT, FUNGUS AND WEED CONTROL
Dr. E. R. de Ong

The information is grouped according to field of application rather than to chemical composition or nomenclature. Chapters on insecticide label, seed disinfectants, herbicides, forest insects and diseases, livestock insects, and the pests found in household and industry. Fumigation of warehouses, residual sprays and preservatives for fruits, vegetables and wood products are covered. An up-to-date guide on pest control with the needs of operators, agricultural and structural specialists carefully considered. Shippers and warehouse personnel will find the book useful..... $10.00

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Does Nitrogen Affect Uptake Of Phosphorus Into Plants?

By Dr. Vincent Sauchelli

Chemical Technologist
National Plant Food Institute
Washington, D.C.

DOES nitrogen help or hinder the uptake of phosphorus by plants? This question is of more than academic interest. It has a direct bearing on fertilizer management practices. In recent years agronomists in many countries of the world have devoted much time and effort to the investigation of the influence of nitrogen on the phosphorus nutrition of crop life. The functions of nitrogen and phosphorus as well as of each of the other nutrient elements are coordinated and interdependent. If they are considered collectively it must be remembered each is different. Their interlocking effect is on the one and same plant, the objective being to cause a balanced development of all the plant tissues. The application of imbalanced amounts of nutrients can upset the normal growth of plants which then finds expression in one function being overperformed while the others may be only partially carried out or not at all depending upon the degree of deficiency of the nutrient element.

Dr. Sauchelli

Mineral Uptake by Crops

In this column we have at times discussed "ionic balance" and "base or cation exchange." It is necessary to have some knowledge of these concepts to understand clearly how plants take up mineral nutrients through their roots. Base or cation exchange in plant feeding helps in predicting the mineral composition of a crop growing on a specific soil, since the exchange of cations between soil particles and plant roots can be regarded as an example of base exchange.

Uptake of potassium, calcium, magnesium, sodium and perhaps some of the minor elements is essentially therefore a result of base or cationic exchange. The proportions of the several exchangeable cations in the root zone influence the amounts that are present in the plant. If the ratio of any two in the plant leaves is excessive or deficient crop growth will be unduly limited and the feeding value of the herbage—if the crop is pasture or hay—to the livestock will be unduly lessened. It is known for example that a relatively excessive application of potassic fertilizers can induce a deficiency of magnesium in the herbage.

A Lesson From India

A most interesting application of the beneficial effect of the nitrogen-phosphorus relationship was made by an Indian scientist to the current economics of fertilization in that country (1). Dr. Satyanarayana assembled many field data which reveal that an increased recovery of nitrogen in crop harvests occurred when nitrogen was used with superphosphate. For example, when 30 lb. nitrogen were applied to paddy only 4 to 9 lb. (14% to 30%) of the total applied nitrogen were recovered in the grain, depending on soil type. When the same amount of nitrogen (30 lb. N) was applied together with 30 lb. phosphoric anhydride (P_2O_5), from 19% to 58% of the applied nitrogen was recovered in the extra yield harvested.

Hence, he emphasized in his comments that less nitrogen is lost and more is utilized by the crop when nitrogen is used jointly with phosphorus.

In a country such as India where nitrogen supplies are seriously inadequate such field results pointed to a positive method of preventing waste of this costly nutrient element. The Indian authorities frown on the use of "straight" nitrogen unless adequate amounts of phosphorus are in the soil. This lesson should not be lost to other nations.

Other similar beneficial effects of the joint use of nitrogen and phosphorus can be cited from research in our own country and Canada. Dr. D. A. Rennie of the University of Saskatchewan (2) reported that nitrogen promoted uptake of nutrient phosphorus by cereal grains sown on fallow land. R. A. Olson and A. F. Dreier of the Nebraska Agricultural Experiment Station strikingly demonstrated in a series of field tests that yield increases for nitrogen and phosphorus applied separately were less than when the two nutrients were applied together. The elements complement each other.

Nitrogen seems to stimulate roots to absorb phosphorus. R. Coleman (3) investigated the differential response of cotton and oats to phosphorus on two Mississippi soils and concluded that the poor response to phosphorus when nitrogen levels were low was due to the inability of the crops to utilize the applied phosphorus because of the inadequate supply of nitrogen.

The efficient feeding of crops is a complicated affair which may be resolved by a soil test provided the tester can draw upon experience and knowledge based on proper correlations with extensive field experiments for his interpretation. The simple chemical test without correlated field data is no more than a guess.

(1) Efficient Utilization of Nitrogenous Fertilizers, P. Satyanarayana, "Fert. News," Vol. 2, No. 11, pp. 8-11.
(2) D. A. Rennie & J. Mitchell, 1954, Can. J. Agr. Sci. 34, pp. 353-363.
(3) R. Coleman, Effect of Nitrogen on Response of Cotton and Oats to Phosphorus, J. A. Soc. Agr., No. 36, 1944.

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California Fertilizer Assn. Program Calls For Talks by Industry Men and Movie Star

LOS ANGELES — The California Fertilizer Assn. has announced details of the program for its thirty-fifth annual convention, to be held at the Ambassador Hotel, Los Angeles, on Sunday, Monday and Tuesday, Nov. 9-11, 1958. Featured speakers will be Dr. Russell Coleman, executive vice president. National Plant Food Institute, Washington, D.C.; and Roy Kennedy, credit manager, California Spray-Chemical Corp., Richmond, Cal., and Ronald Reagan, screen and television personality.

Some 600 persons, from all over the U.S., from Canada, and from Mexico, will be in attendance, according to Howard H. Hawkins, Glendora, association president. The program is keyed to the convention theme, "Building For The Future."

Registration begins Sunday, Nov. 9 in the hotel's main lobby and will continue on Monday.

Howard H. Hawkins, CFA president, will open the morning session on Monday, and Sidney H. Bierly, general manager, will present his annual report to the CFA membership.

The program of the soil improvement committee will be presented by Malcolm F. Rice, committee agronomist, and Dr. Coleman will address the group on the subject, "Our Future is in the Bag."

Mr. Kennedy will present a talk entitled: "Credit—The Ignition System of Commerce (or, Don't Foul Your Spark Plugs)."

An address entitled "Show Business and Business" is scheduled for Monday afternoon, by Ronald Reagan, Pacific Palisades, Cal.

A panel discussion on "Building for the Future" is a feature of the afternoon program. Moderator of the panel will be Dr. D. G. Aldrich, Jr., chairman of the department of soils and plant nutrition, University of California, Davis and Berkeley.

Appearing as panel members, and the subjects they will discuss, are the following:

Roy Kennedy, credit manager, California Spray-Chemical Corp., Richmond, Cal., "Sound Credit Planning for the Fertilizer Industry"; J. Earl Coke, vice president, Bank of America, San Francisco, "Prospects for Expanded Farmer Use of Existing Credit Facilities"; R. L. Luckhardt, supervisor, agricultural technical service, Collier Carbon and Chemical Corp., Brea, Cal., "Fertilizer Industry Technology Trends"; W. L. Dixon, Jr., vice president and general manager, Pacific Guano Co., and president and general manager, Western States Chemical Corp., Berkeley, "Trends in Granular Material Production and Use."

Demont W. Galbraith, president, Agriform of Northern California, Inc., Woodland, Cal., "Development of Ammonia Marketing Trends"; Ralph S. Waltz, vice president and manager, agricultural department, Wilson & Geo. Meyer & Co., San Francisco, "Wholesale Distribution Trends"; and James F. Sloan, president, J. F. Sloan Co., Salinas, Cal., "Retail Distribution Trends."

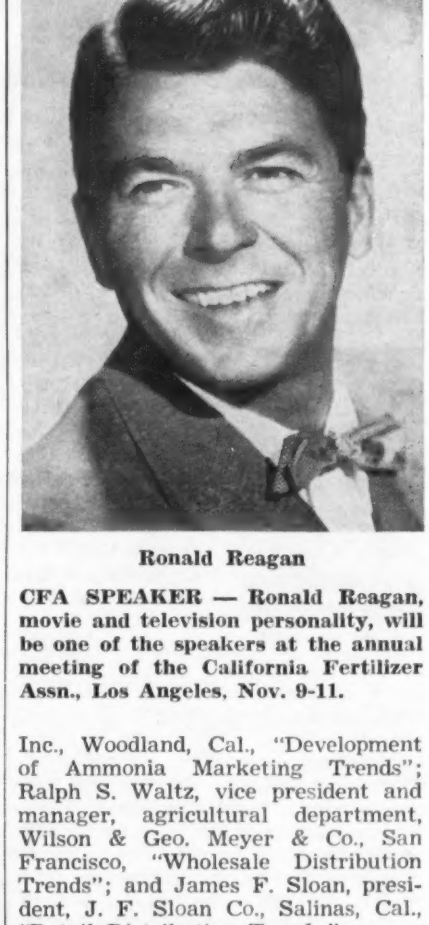
The annual banquet will wind up the program following a cocktail hour sponsored by American Potash and Chemical Corp.

The banquet and dinner dance, beginning at 7:30 p.m., will be held in the Cocoanut Grove of the Ambassador Hotel, which will be given over exclusively to the CFA group, on that evening. Dancing will be enjoyed between dinner courses, and following dinner, to the music of Freddie Martin and his orchestra, according to the CFA. Broadway star Carol Channing will entertain.

Recreation for the ladies as well as the men has been arranged in detail. The ladies will enjoy a social hour and luncheon at the Huntington-Sheraton Hotel in Pasadena, courtesy of CFA. During the convention, they will participate in a golf tournament, two putting contests, bridge and canasta competition—all for prizes.

Men will participate in golf and bowling tournaments on Nov. 10. Prizes will be awarded.

The program was developed by committees under the direction of John M. Hooper and Thomas H. Lathe, both of Wilson & Geo. Meyer & Co., Los Angeles; and Mrs. Frank McGrane of Arcadia, Cal.



Ronald Reagan

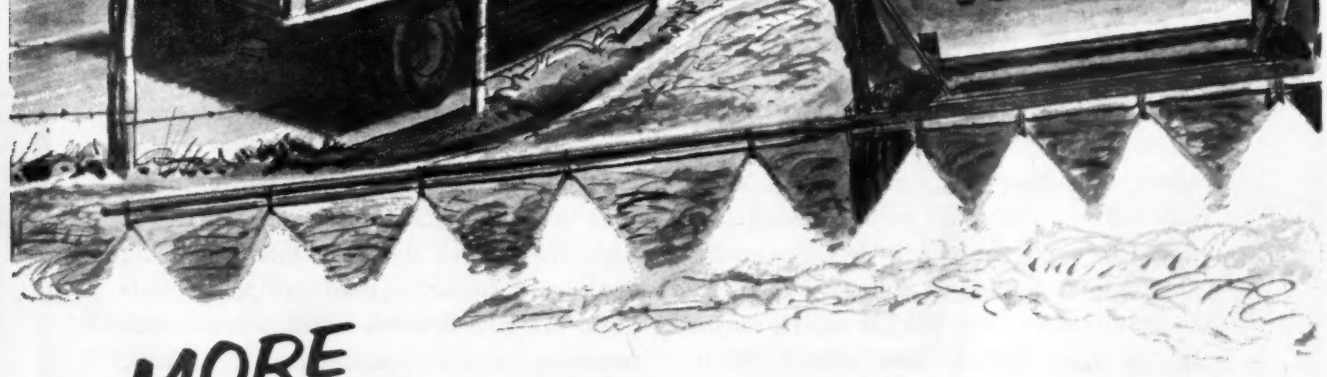
CFA SPEAKER — Ronald Reagan, movie and television personality, will be one of the speakers at the annual meeting of the California Fertilizer Assn., Los Angeles, Nov. 9-11.

IMC Scholarship Program Under Way as School Opens

SKOKIE, ILL.—International Minerals & Chemical Corp. has announced that 38 young men and women are enrolled in U.S. colleges and universities this fall under the company's scholarship program.

Since the inception of the program in 1947, International has awarded 98 scholarships to high school graduates, 26 of whom have completed four-year college courses with degrees. Four-year scholarships have gone to 70 students, while 28 received special, one-year awards.

IMC scholarships are awarded under a general corporate plan, as well as through separate programs sponsored by the potash, plant food, phosphate minerals, and phosphate chemicals divisions. The general plan provides four-year scholarships to sons or daughters of employes, or to employes who meet academic qualifications. Eight students are currently in colleges or universities of their choice under this plan.



MORE FARMERS BUY Arcadian® NITROGEN than any other brand!

ARCADIAN®
LIQUID NITROGEN PRODUCTS

URAN® Nitrogen Solution
Urea, Ammonium and Nitrate Nitrogen
FERAN® Nitrogen Solution
Ammonium and Nitrate Nitrogen
NITRANA® Nitrogen Solution
Nitrate and Ammonia Nitrogen
Anhydrous Ammonia
Concentrated Ammonia Nitrogen

ARCADIAN
DRY NITROGEN PRODUCTS

AMMONIUM NITRATE
Pelleted Nitrogen Fertilizer
UREA 45 Nitrogen Fertilizer
Pelleted Urea Nitrogen
A-N-L® Nitrogen Fertilizer
Nitrogen with Magnesium
AMERICAN NITRATE of SODA
Nitrate Nitrogen and Sodium

All of the above products are for direct application to the soil. ARCADIAN Nitrogen is also the leading source of nitrogen used in the manufacture of mixed fertilizers.

You see ARCADIAN Nitrogen everywhere! That's because, over the years, more and more farmers have found that ARCADIAN products are higher in quality . . . more dependable.

The most complete line! You can fill the nitrogen needs of *any* customer when you sell the ARCADIAN line. You're handling the biggest, most complete line of liquid and dry nitrogen products on the market!

Easy to sell! Farmers are pre-sold on ARCADIAN Nitrogen products. Powerful, consistent advertising and promotion stimulate year-long demand that sends farmers in ready to buy! And you know they'll be back—*sold* on the superior ARCADIAN features, born of millions of tons of nitrogen experience.

Keep your profits high by keeping stocked up on ARCADIAN Nitrogen. Remember, no other brand moves as fast! Order today!

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Report on Georgia's Intensified-Soil-Fertility Trial

By Ralph L. Wehunt
Extension Agronomist—Soils and Fertilizer
Agricultural Extension Service
University of Georgia College of Agriculture

ATHENS, GA.—An Intensified Soil Fertility Program was initiated by the Georgia Agricultural Extension Service last fall on a "pilot" basis. The program was conducted, under the leadership of county agents and their assistants, in six south central Georgia counties—Colquitt, Coffee, Tift, Thomas, Worth, and Laurens.

One purpose of the program was to focus attention on the use of the right kind and amount of fertilizer and lime for profitable crop production. This report will point up preliminary data of a significant nature on fertilizer consumption in the six counties.

Fertilizer consumption data are those reported by the Georgia Department of Agriculture for the period Jan. 1 to Dec. 31, 1957 and the period Jan. 1 to July 31, 1958. In other words, data for a 12-month period in 1957 will be compared to a 7-month period in 1958. It is estimated that the tonnage figures reported for the 7-month period in 1958 represent 75-80% of the total fertilizer consumption for a 12-month period.

Although it is realized that it would be more meaningful to compare consumption figures of equal time periods, it was felt that a preliminary report at this time would be useful to county agents and to the fertilizer industry. To be prepared to meet the demand for different fertilizer grades, it is important that the fertilizer industry be advised of the impact of educational programs on fertilizer usage.

Here are some highlights which show the influence of the Intensified Soil Fertility Program on fertilizer consumption in the six south central Georgia counties:

1. Farmers used fewer tons of low-analysis non-recommended fertilizers: About 24.9% of the fertilizer used in the six-county area during 1957 consisted of non-recommended grades such as 4-8-8 and 4-8-6. But only 14% of the fertilizer used in the 7-month period of 1958 was non-recommended grades. About 28,281 tons of 4-8-8 and 4-8-6 fertilizers were used in 1957 as compared to only 12,552 tons during 1958.

2. Many farmers used a different kind of fertilizer: About 90.1% of the fertilizer used during 1957 contained an even amount of phosphate and potash, such as 4-12-12 or 6-12-12, as compared to only 78% in 1958. Approximately 6.6% of the fertilizer used in 1957 contained a high phosphate-low potash content as compared to only 3.6% in 1958. The big shift occurred in fertilizer ratios with a low phosphate-high potash content such as 5-10-15. About 3.3% of the fertilizer used in the six counties during 1957 consisted of low phosphate-high potash fertilizers as compared to 18.4% in 1958.

3. Farmers used about 350% more high-potash fertilizers: Consumption of 5-10-15 in the six Intensified Soil Fertility counties increased from 3,027 tons in 1957 to 16,386 tons in 1958—a gain of 445%. Similar, but less striking increases occurred in 3-9-12, 3-9-13, and 0 10-20 fertilizers. About 66% more 5-10-15 fertilizer was used in the six counties during the first seven months of 1958 than was used in the entire state in 1957—16,386 tons in 1958 as compared to 9,873 tons in 1957.

4. The average nutrient content of mixed fertilizers increased: Fertilizers used in the six counties in 1957 contained an average of 25.0% plant nutrients as compared to 26.3% in 1958—a gain of 1.3%. Most of this increase can be attributed to potash. The average potash content of fertilizer used in 1957 was 10.5% as compared to 11.5% in 1958.

5. Farmers used more nitrogen: About 23 tons more actual nitrogen were used from the three leading nitrogen sources during the 7-month period of 1958 than the entire 12-month period of 1957. There was also a definite trend to higher analysis nitrogen materials. About 9,132 tons of ammonium nitrate were used in 1957 as compared to 10,187 tons in 1958—a gain of 1,055 tons.

6. Farmers used more lime: Although no accurate figures are available on lime consumption, suppliers in the six-county area have indicated lime consumption was greatly increased.

In summary, this program has shown that a well-organized team approach to soil fertility by enthusiastic workers can have a tremendous beneficial influence on more efficient fertilizer usage. Soil samples in the six Intensified Soil Fertility counties spurted from 2,200 last year to approximately 14,000 this season — or six times as many. This shows that soil tests played a major role in focusing attention on use of the right kind and proper amount of fertilizer and lime.

Pellet-Form Weed Killer Successful Through Ice

JACKSONVILLE, ARK.—"Granular Weed Rhap-20," a pellet-form aquatic weed killer produced by Reasor-Hill Corp., has given successful results when placed on top of the lake ice during the spring months, the company reports.

The killer, which starts with Union Carbide Chemicals Co.'s acetic acid and phenol, from which 2,4-D is formulated, is esterified with Carbide's 2-ethylhexanol. The resulting ester is blended with clay and pelletized in water.

According to Reasor-Hill, the Weed Rhap-20 will control or retard emergent weeds such as lilies, cattails and alligator weeds; will greatly reduce some types of algae; and will control elodea, milfoil, fanwart, tape grass and ludwigia.

Buford H. Grigsby, of the botany and plant pathology department of Michigan State University, said 2,4-D ester was the most promising herbicide for rooted aquatic weeds.

In a 1956 experiment, Drs. Grigsby, R. H. Hamilton and J. Smith treated 50 by 50 ft. lake plots in March with 2,4-D pellets at a rate equivalent to a concentration of 20 ppm.

"At the time of application there were about 8 in. of ice of which the top 1-2 in. was soft slush ice. The pellets were applied by means of a 3-ft. Gandy fertilizer spreader," the experimenters said.

"The ice remained as a continuous

(Turn to HERBICIDE, page 14)

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

Tax experts are betting that the Internal Revenue Service will examine entertainment and travel expenses closely next year. The controversial line 6(a), which serves as a "red flag" to call the attention of the investigators to this total, was rescinded at the eleventh hour for 1957 returns. Here are some questions and answers about things farm supply dealers and their employees should do to be in the clear on this item and get the maximum deductions on next year's tax returns.

What kind of records must I keep?

To avoid any trouble with your deduction, you will need to have rather complete records. You will need to have a record of the date of the entertainment, the people involved, the time and details of all expenses. You can keep this in a day-by-day record book along with your appointments. You can file a separate form each day you travel or entertain. Or, you can keep this on individual cards or forms listing all the essential information to support your income tax deductions.

What business expenses can be deducted?

Any and all business expenses of travel and entertainment can be taken as an income tax deduction. However, you must be able to prove that:

1. You actually paid the travel and entertainment expenses claimed.

2. That the expenses were not personal, but for business purposes.

As you can see, these two requirements are the main reason the Internal Revenue Service is checking entertainment and travel expenses so closely. And, they are checking on these two things . . . actually paid and for business purposes.

What are the requirements for a business expense?

There is no hard and fast rule on this. Court cases have a bearing on the final decision, but circumstances alter cases. For instance, you can have a business expense for entertainment that does not produce business. You take a customer to dinner and fail to close the deal. As long as this is a customary practice you can claim the expense as a deduction if it is considered "necessary." You can be guided by two parts of the Internal Revenue Code that set up the general rules for entertainment and travel expenses:

1. The expense must be ordinary—something done frequently in your business.

2. It must be a necessary expense—one that is reasonably expected to produce business.

Must I travel in the most economical way?

No. As long as your business trip is considered ordinary and necessary, you can travel in any way you prefer. For instance, you can take a deluxe flight rather than a tourist flight, Pullman rather than chair car, or any other first class accommodations you want. You must, however, take the most direct route or charge off the expense of any side trips for pleasure. For instance, traveling from San Francisco to New York via New Orleans would not be deductible unless you had business in New Orleans. You would be permitted to deduct only the cost of the direct trip between San Francisco and New York.

What if I entertain at home?

Any dealer who entertains in his home for business purposes can deduct the cost of the entertainment. This would include all food and drink and any extra help needed to handle the entertainment. This is a touch-and-go proposition in proving that the entertainment was a "necessary and ordinary" business expense. Just because nearly everyone is a potential customer of your business does not entitle you to entertain everyone and claim the expense as a tax deduction.

How can I prove my travel and entertainment expenses?

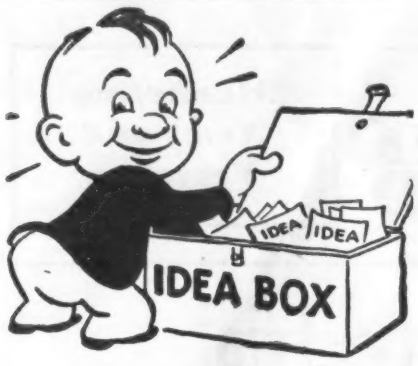
Keep records! It sounds simple, but most of us hate to bother with keeping records. At the end of the year, we try to reconstruct our expenses for the year. It is almost impossible. We are apt to overlook something and lose a tax deduction or include something we cannot prove and have trouble. And, since the burden of proof is on you, it is most important that you keep detailed records of all entertainment and travel expenses to realize maximum tax deductions. Keep records.

A Selling Job

Fifty-four percent of the soils in northern Georgia are low in phosphate and 40% are low in potash, according to University of Georgia reports based on soil test information.

In southern Georgia, 45% are low in phosphate and 68% are low in potash.

Is there a selling job to be done? No doubt about it.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6795—Product News Sheet

"News Briefs on the Creative Use of M & C Process Materials" is a regular publication of Minerals & Chemicals Corporation of America. The publication contains information about the uses of the company's mineral products for varied industrial purposes. Check No. 6795 on the coupon and mail it to Croplife to secure details.

No. 7186—"Tare-Out" System

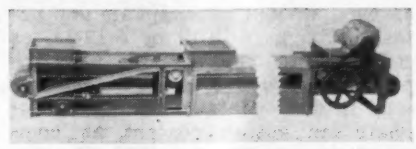
A new automatic "taring-out" system makes it possible to fill a variety of containers with exactly the same amount of material each time, regardless of the weight of each container, it is claimed by officials of the Richardson Scale Co. Centered in a well-mounted panel are the controls for positioning a container on the weigh platform, dialing in the desired weight, taring-out the weight of the container, delivering the material and removing the filled container. Now in operation weighing from 94 to 259-lb. amounts of cement-impregnated wood fiber into steel forms which vary in weight from 300 to 370-lb., this system has a normal speed of two cycles per minute. Weighing smaller quantities, the speed would be considerably increased. Check No. 7186 on the coupon and mail it to secure details.

No. 6797—Tractor-Shovel

The Frank G. Hough Co. has announced a new four-wheel-drive, rubber-tired tractor-shovel with 7,000 lb. carry capacity, the model H-70. The loader will replace the model HH Payloader. Company officials say that features of the new H-70 include more power, more traction, stronger components, greater protection against dirt and dust, more efficient torque-converter, complete power-shift transmission, power-transfer differentials, power-steering, pry-out bucket action, safety boom arms, power-boosted brakes and numerous refinements. New gasoline and diesel engines provide from 105 to 110 h.p. Diesel engines are available in either 2- or 4-cycle types. Secure details by checking No. 6797 on the coupon and mailing it to Croplife.

No. 7191—Trough-Belt Conveyor

The Universal Hoist Co. announces a new conveyor designed for all fine free-flowing material in capacities up to 2,750 cu. ft. per hour. The conveyor has a 12-in. belt which is pulled through a formed steel trough at up to 500 ft. per minute. Called the Model K, it has a reversible motor and can be run in either direction. More details can be obtained by checking No. 7191 on the coupon and mailing it. Please print or type.

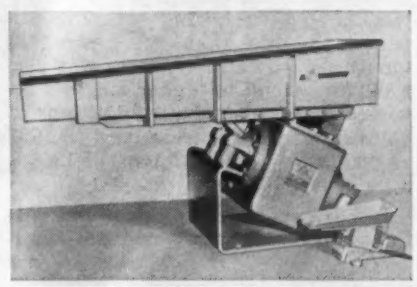


Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 7125—Vibratory Feeder

A new vibratory feeder with capacity rated at 10 tons per hour has been added to the Eriez Manufacturing Co. line of Hi-Vi feeders. The unit is designed to handle medium to heavy feeding to batch weighing scale, hoppers, processing mills, pulverizers, dryers, furnaces, belt conveyors, and the like. Seven standard trays are available in regular 16-ga. mild steel



or 16 ga. Type 304 stainless steel. The units incorporate the Eriez electro-permanent magnetic drive which requires no rectifier, and they can be wired into available AC power. Full details on the new unit can be had by checking No. 7125 on the coupon and mailing it to Croplife.

No. 7131—Flexible Loader

The Flex-Bend loader, manufactured by R. T. Sheehan Co. is described in a bulletin released by the company. Included in the loading unit are a power car, belt drive and stacker cars and as many center cars as required to make the desired length. Car dimensions are: power car, 36 in.; belt drive car, 36 in.; center car, 18 in., and stacker car, 96 in. It has four drive units, using three-phase, 220 or 440-volt power supply. Conveyor belts are 12 in. or 18 in. wide and they travel 36 in. above the floor at a speed of 120 ft. per minute. The 12-in. belt bends horizontally on a 5-ft. inside radius and the 18-in. belt on a 6-ft. inside radius. The stacker boom will swing 180° and has an adjustable delivery height of from 18 in. to 72 in. and a belt speed of 400 ft. per minute to facilitate stacking. The bulletin can be secured by checking No. 7131 on the coupon and mailing it to Croplife.

No. 7129—Pneumatic Conveyor Bulletin

A bulletin describing the Robinson Aire-Probe conveyor for handling fine, granular and dry pulverized materials pneumatically has been released by the Robinson Air-Activated Conveyor Systems division of Morse Boulger Destructor Co. The unit can be either portable or built in, and it can pick up its load from a pile on the floor or ground or can be hooked up permanently or temporarily to a loading chute. Bulletin No. 401, together with supplementary bulletins, will be supplied by checking No. 7129 on the coupon and mailing it to Croplife.

No. 6799—Drum Filter Bulletin

Dorr-Oliver, Inc., announces the availability of a 24-page, two-color bulletin entitled "The Oliver Continuous Rotary Drum Filter for the Process Industries." The publication describes the various designs of the five principal types of rotary drum units and their component parts and details conventional accessories, auxiliaries, media and materials of construction. Also included are numerous photos and drawings plus tables of sizes and capacities of each design. Check No. 6799 on the coupon and mail to secure details.

No. 7174—Industrial Fan Bulletin

Bulletin No. I-585 issued by the Day Co. describes the line of Day industrial fans. Construction features, applications, fan arrangements and selection information are described in the 16-page booklet. Temperature and altitude selection data, capacity tables, dimensions, special arrangements and special types of fans are listed. The fans are manufactured in a variety of sizes with capacities ranging from 1,000 to 30,000 CFM and static pressures from 2 to 15 in. Check No. 7174 on the coupon and mail it to secure a free copy of the bulletin.

No. 7126—Valve Bag Packer

E. D. Coddington Mfg. Co. has released information on its Air-Pac packer which fills standard valve bags of from 20 lb. to 100-lb. capacity. A built-in scale provides close weight control and shuts off packer automatically when the desired weight is reached. A company statement said the machine uses the improved fluidizing air principle of conveying material into the bag. For more information, check No. 7126 on the coupon and mail it Croplife.

No. 7179—Copy Board Handbook

"How to Use Changeable Copy Boards Most Profitably" is the title of a 32-page pocket-size handbook published by Wagner Sign Service, Inc. Subjects in the handbook include advantages of using copy boards as a merchandising tool, storage of letters, planning and writing copy, applying copy to the board and changing copy. A list of 678 slogans is included in the book. Check No. 7179 on the coupon and mail it to secure details.

No. 7160—Portable Pump

The Douglas Chemical Co. is merchandising a new portable pump. It is especially designed for the company's grain fumigants, but can be

Send me information on the items marked:

- ☐ No. 6795—Product News Sheet
- ☐ No. 6797—Tractor-Shovel
- ☐ No. 6799—Drum Filter
- ☐ No. 6800—Food, Fiber Movie
- ☐ No. 6801—Lime Spreader
- ☐ No. 6802—Seed Disinfectant
- ☐ No. 6806—Weed Killers
- ☐ No. 6807—Handbook
- ☐ No. 6808—Chemical Folder
- ☐ No. 6809—Wall Chart
- ☐ No. 7125—Vibratory Feeder
- ☐ No. 7126—Valve Bag Packer
- ☐ No. 7129—Pneumatic Conveyor
- ☐ No. 7131—Flexible Loader
- ☐ No. 7158—Fumigant Pump
- ☐ No. 7160—Portable Pump
- ☐ No. 7167—Agricultural Films
- ☐ No. 7174—Industrial Fan
- ☐ No. 7179—Copy Board
- ☐ No. 7186—"Tare-Out" System
- ☐ No. 7191—Trough-Belt Conveyor

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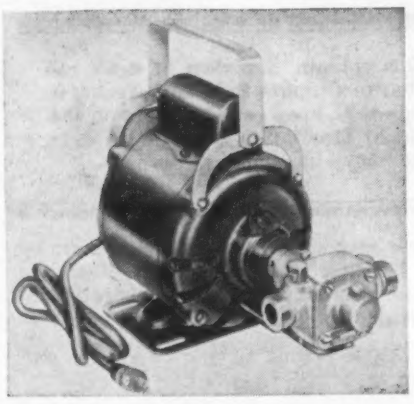


used for most any pumping job. Ordinary garden hose connections will fit the pump connections. Pump motors come in two sizes—¼ h.p. and ¾ h.p. The motor is a single phase, 60-cycle, 115V, capacitator type electric motor with a 5-ft. cord and safety plug. Motor and pump are sold as a single unit.

No. 6800—Movie on Food and Fiber

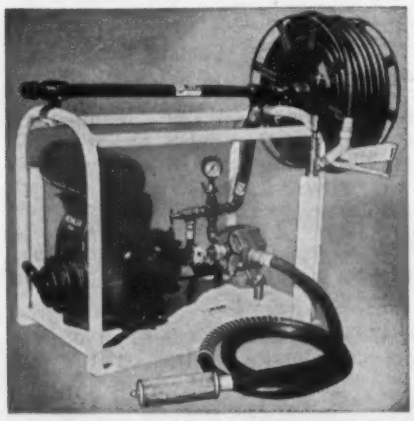
A film on agriculture entitled "Keep America Growing . . . Quality Food," a companion to the film "Keep America Growing . . . Quality Fruit," is being released by California Spray-Chemical Corp. The 16mm color film, which was in production for three years, was shot by Everett L. Ingraham, agricultural movie photographer. It is a report on American agriculture and shows how growers and technical field men team up to meet the growing demand for top-quality, disease- and insect-free produce. Secure details by checking No. 6800 and mailing to Croplife.

No. 6802—Seed Disinfectant

A liquid suspension of thiram, for slurry treatment of seed and for use as a paint or spray repellent against rodents, rabbits, deer and birds, has been developed by the DuPont Co. Called "Arasan" 42-S seed disinfectant and protectant, the company states it is the first commercial liquid suspension of thiram and the development marks a major accomplishment in company history. For further details, check No. 6802 on the coupon and mail.

No. 7158—Grain Fumigant Pump

A pump-engine unit designed especially for the application of heavier-than-air grain fumigant materials



in flat or round storage buildings is being manufactured by the Tryco Manufacturing Co., Inc., and is being marketed by the Seedburo Equipment Co. The high-volume, vane type pump of the new model F-100 delivers capacities up to 19 gal. per minute, and is equipped with special packing that will withstand the penetrating action of grain fumigants. For more details check coupon No. 7158 and mail to this publication.

No. 6801—Lime Spreader Brochure

Literature describing the "New Leader" Model L-145 lime spreader is now available from Highway Equipment Co. The brochure contains information about design, performance and specifications of the spreader. For additional details check No. 6801 on the coupon and drop in a mailbox.

No. 6806—Weed Killers

Four garden weed killers have been added to the Du Pont chemical line for next year. Included are Du Pont Chickweed Killer, based on neburon; Du Pont Crabgrass Killer, based on amine methyl arsonates (AMA); "Manzate" maneb fungicide; and Du Pont Combination Garden Spray, containing methoxychlor insecticide and "Parzate" zineb fungicide. All four products are formulated for use in hose sprayers or other common garden sprayers, the company said. For details, check No. 6806 on the coupon and mail to this publication.

No. 7167—Agricultural Films

American Cyanamid Co. has published a booklet listing agricultural films available from its agricultural division. The illustrated booklet gives a brief description of each film, its title and length. For the most part the films deal with livestock production, and are available free for group showings. For further information, check coupon No. 7167 and mail to Croplife.

No. 6808—Chemical Folder

A four-page folder, containing specifications, descriptions, uses and shipping information about industrial chemicals, has been released by Schio Chemical Co. The folder highlights the uses of anhydrous ammonia, aqua ammonia, nitric acid, urea and nitrate solutions in the manufacture of a large number of other products. Check No. 6808 on the coupon and mail to this publication for details.

No. 6809—Safety Wall Chart

A large safety wall chart providing instructions for the proper handling of chlorate and perchlorate chemicals has been prepared by American Potash & Chemical Corp. for companies active in chlorate and perchlorate application. The wall chart contains a digest of safety rules and conduct. It includes such subjects as: materials that may ignite if mixed with chlorates or perchlorates, what types of clothing to wear and how to care for clothing when working with chemicals and other subjects. Check No. 6809 and mail for further details.

No. 6807—Research Handbook

After seven years of research, the Nitro-Form Agricultural Chemical Co. has published a handbook containing the results of experiments with Urea-form-based fertilizer. Called "Your 'Blue Chip' Fertilizer Program, Manufacturers' Handbook," the publication is aimed at all phases of the industry including production, research and sales. For more information, check No. 6807 on the coupon and mail.

DUSTER KILLED

SACRAMENTO—Norman N. Paisley of Tracy, Cal., was killed when his crop dusting airplane struck a power line, burst into flames and crashed into a canyon near Martinez, Cal. A grass fire was started by the crash and would-be rescuers were warned away until the power could be turned off the broken line. Mr. Paisley was dusting tomatoes when he crashed.

Unload fertilizer in the rain? Sure—if it's Spencer "Mr. N" Ammonium Nitrate in the new weather-proof bag. (See complete story below.)

New from Spencer Chemical Company . . .

Fertilizer In An All-Plastic Bag That Farmers Can Re-Use!

Spencer "Mr. N" Ammonium Nitrate now comes in a plastic bag you can store right out in the open:

A new kind of 50-pound bag of Spencer "Mr. N" Ammonium Nitrate is fast becoming a favorite with farmers wherever it is available!

Made entirely of polyethylene plastic, these new bags keep ammonium nitrate drier than any other bag made. In fact, polyethylene bags of Spencer "Mr. N" are so weather-tight that even a drenching rain can't get inside!

Amazingly Strong

Spencer Chemical Company has spent nearly three years making sure polyethylene will take the rough treatment fertilizer bags receive.

Makes Storage Easy

Storage is no problem with these new bags, because farmers can unload and temporarily store them right in the field. Dealers use porches and cribs for storing rain-proof bags of Spencer "Mr. N."

Re-Use After Empty

When the bags are empty, your customers will use them to store seed or small tools, cover windows, insulate buildings, or heat-seal the bags together to form tractor covers, tarpaulins, etc.

Now being introduced by a hard-selling advertising campaign in leading farm magazines, Spencer "Mr. N" in the new 50-pound plastic bag can be ordered direct from your manufacturer's representative. Contact him right away for more information on this new profit-producer offered *only* by Spencer Chemical Company.

Make a porch a shed! This dealer is using plastic bags of "Mr. N" as a wall so that he can even store *paper* bags outside! Spencer Chemical Company, Dwight Building, Kansas City 5, Missouri.

Tucci & Brothers in Florida Combine Growing, Supply and Distributing Firm

By PORTER V. TAYLOR
Croplife Special Writer

Pat Tucci & Brothers have long been known as successful growers in South Florida. Their farming operations during an average year include 800 acres of potatoes, 400 acres of tomatoes, and 200 acres of cantaloupes. They also operate tomato and potato packing houses.

Prior to the time of establishing their own supply store, the Tuccis found that they had to go other places for insecticides, small tools and many farm needs, so shortly after taking on a distributorship for Swift's fertilizers they decided to tie in a retail supplier store with their growing, packing and shipping operations.

Their main office and retail store, located at 22 Flagler Ave. in Homestead, Fla., has 33,000 sq. ft. of floor space. The building is located facing one main thoroughfare, with a U.S. highway passing along one side and the Florida East Coast Railway along the other side. The first floor of the warehouse is 50 ft. wide and 270 ft. long. The retail sales area is 90 ft. wide and 125 ft. long, with a second floor storage area 90 ft. by 50 ft. The retail showroom has a plate glass window in front and on the highway side. The loading platform is also used to display small farm implements.

The inside of the retail section includes a large island display of small bags of insecticides, as well as boxes, cans and bottles of insecticides. Small tools, garden hose, and similar merchandise are shown on this display. A wall rack display features larger hand tools such as shovels, rakes, hoes, etc. Behind the sales counter, wall shelving is used for an additional display of more expensive tools, paint brushes, flashlights, sun glasses, eye shields, soil test kits, hand drills, pruning shears, and seeds. In addition to having a series of doors open from the warehouse along the rail side and the highway side, there is a loading platform and wide door from which retail customers may be served at the front of the building. Tony Tucci is manager of the retail division.

Another brother, Andy, is office manager and manager of the fertilizer sales to growers. Last year the Tucci firm sold over 7,000 tons of one brand of fertilizer.

"We feel that the retail division and our grower division have made an excellent tie-in to provide one-stop service for our large grower customers," says Andy Tucci.

Not only do the big growers find it convenient to buy their incidental farm supplies from the Tucci firm, but each grower has many employees who buy tools and home gardening supplies there.

The availability of fertilizers, insecticides and other supplies in small quantities at the retail store has also eliminated the problem of having big growers request small quantities from the warehouse sales area.

The Tuccis feel that the retail outlet can be serviced with very little additional overhead. Most big grower deliveries are made very early in the morning, however the business has to be open all day anyway. Therefore, retail sales which are normally heavier in the afternoon hours, may be made with very little additional sales help.

GROWERS-SUPPLIERS — Shown above are two of the four Tucci brothers who operate Pat Tucci & Bros. supply store in Homestead, Fla. Andy Tucci (left) is the office manager and manager of fertilizers, and Tony Tucci (right) is manager of retail store sales.

The full time services of a Swift's field man are allocated to serve Tucci customers. This field man helps growers with technical problems, and at the same time provides information for customers at the retail outlet.

Prices in the retail outlet are based on suggested manufacturer's retail prices and prices of other supply firms in the area. Advertising usually consists of goodwill ads in the local newspaper which are aimed at both growers and the general public. Each year the Tucci firm has a big party for their customers at a local farmers' club. At these annual affairs there are movies and talks by farm experts on subjects pertaining to latest developments in various phases of the industry.

The Tucci firm includes founder Pat Tucci and brothers John R., Andy, and Tony.

VIRUS DISEASE STUDY

DAVIS, CAL.—Vegetable virus diseases will be the subject of a year of concentrated study by Raymond G. Grogan, associate professor of plant pathology on the Davis campus of the University of California. Mr. Grogan has a grant from the National Science Foundation to spend a sabbatical year experimenting with new methods of serology—a laboratory technique for identifying viruses.

HEADQUARTERS—Pictured are the headquarters of Pat Tucci & Bros., distributors, retail farm supply merchandisers and growers. The operation is located in Homestead, Fla.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Permits to mix and distribute fertilizer-pesticide mixtures were given by the state of Virginia, providing rules of labeling and procedure are strictly observed. Aldrin and Heptachlor were the pesticides mentioned specifically in the announcement by the state's Department of Agriculture.

Sulfur production during July was 359,384 tons of native sulfur and 47,173 tons of recovered, the U.S. Bureau of Mines reported.

J. H. Elliott, Rohm & Haas Co. of Canada, Ltd., was elected president of the Canadian Agricultural Chemicals Assn. at the group's meeting in Winnipeg in September.

A new coding system for improving the nomenclature of nitrogen solutions was suggested by the National Plant Food Institute. Its recommendation was based on the findings of an industry committee which made a study of the situation earlier.

Consolidated Laboratories, a newly-formed division of Schrock Fertilizer Service, Congerville, Ill., was dedicated Sept. 10.

Farm income for the first eight months of the year showed a greatly improved rate, as compared with the first eight months of 1957.

An estimated 31% of approximately 37 million acres of oats harvested during 1954 received fertilizer, according to a report prepared by U.S. Department of Agriculture researchers.

A half-million dollar expansion of its Garfield, Utah, plant is being planned by Western Phosphates, Inc. The expansion would boost total volume of phosphate rock by about 10%.

A special working group representing industry and government is studying the needs of a comprehensive research program to find better means of controlling the boll weevil, most costly insect pest of the nation's cotton crop.

The recent grasshopper control program on ten Western States covered some five million acres, the U.S. Department of Agriculture reported. The effort was reported to have saved many thousands of acres of wheat and other small grain crops from insect damage.

Despite lower price supports for corn and cotton projected for 1959, the fertilizer industry expressed confidence that more acres of these crops will be planted next season.

Anhydrous ammonia sales increased 14% during the first seven months of 1958, the Agricultural Ammonia Institute reported.

Fertilization of wheat lands showed continual increase in past years, the USDA reported in the fifth of its series of articles on fertilizer use by crops and regions of the U.S. A continuing potential for sales was seen.

The American Chemical Society held its 134th meeting in Chicago with the presentation of numerous technical papers on fertilizer production.

Production of superphosphate in the U.S. for the period of July, 1957 to June, 1958, was 5% greater than that of the previous fiscal year, according to figures released by the U.S. Department of Commerce. The greatest gains were recorded in concentrated superphosphate.

The new farm bill will meet its first test in the corn referendum scheduled to be polled in December. In this vote, farmers will decide whether they want acreage allotment controls continued in the corn belt, and put the national price support for corn at the higher of 65% of parity or 90% of the national average market price for the three previous seasons.

Dr. R. T. Allman, president of Bradford Fertilizer & Chemical Co. of Canada, was elected president of the Canadian Fertilizer Assn. at the group's first annual meeting at Murray Bay, Que.

Howard J. Grady was elected executive vice president and a member of the board of directors of California Spray-Chemical Corp. at a recent meeting of the company's board of directors. He has been with the company since 1926.

Estimates for cotton and corn acreages for 1959 were made by the U.S. Department of Agriculture as follows: Cotton, more than 18 million acres, perhaps nearing 20 million acres. Corn will be planted in some 77.5 million acres, the estimate said.

Thomas R. Cox, American Cyanamid Co., was elected chairman of the Northeastern Research and Education Committee at its meeting on Aug. 22.

Production of ammonia in June, 1958, was below that of the same month of 1957, the Bureau of the Census reported. Comparative figures were 336,309 tons in June, 1958, and 348,158 tons the same month of the previous year.

USDA scientists discovered that the southern bean-mosaic virus or its infectious particles move from dead to living plant cells. This opens a new area for research in plant disease control.

A new chief forester for the National Plant Food Institute was named. He is Dr. Laurence C. Walker who took leave from the University of Georgia to take this special assignment.

The National Agricultural Chemicals Assn., through its executive secretary, Lea S. Hitchner, declared in a statement that the industry should not have to bear the cost of setting pesticide residue tolerances by the Food and Drug Administration, since the laws exist for the protection of the public and not for the benefit of pesticide manufacturers.

The American Phytopathological Society met in Bloomington, Ind., to observe its 50th anniversary. Speakers told of possibilities for wider use of chemotherapeutants in the control of various plant diseases.

Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

When Oscar came home that evening, he slammed the side door as he entered the house, and his wife, Minnie, knew immediately that Oscar was in a bad mood. She was thankful that she had prepared Oscar's favorite dish — spareribs and sauerkraut, for that might mellow his mood a little.

Oscar carried his hat in his hand as he entered the house, then hung it on the elk horned coat rack in the front hall. He sniffed the tantalizing odor of sauerkraut, but said nothing. He had not even greeted Minnie, and she knew when he forgot to do this, he was preoccupied.

"Ach, what a day," he said finally, when Minnie called him to dinner.

"Oh," questioned Minnie dutifully, "what went wrong?"

"What went wrong?" Oscar echoed scornfully, as though this question didn't need to be asked. "That Pat and his crazy Farm Products Week. Ach, women coming in all day with big pumpkins, melons, squash, canned goods and all that. They all want prizes. Ach, such foolishness."

"But it brings people into the store," Minnie said in a timid voice. "Isn't that what you and Pat want? Then they buy more."

"I don't want it," Oscar snapped, cutting the spareribs viciously. "It's Pat's idea. All we get are the people that owe us money. Ach, they standt aroundt and ask me questions, and bother Tillie to type out stuff on paper for their melons. Like a circus."

"Aren't you and Pat making more sales because there are more people in the store?"

"Not cash ones. Ach, I neffer saw so many people to try to charge schtuff before. Even they want to charge things below one dollar. I fixed a couple."

"How?"

"I tell them that we don't charge anything below $5.00. Ach, one lady walked away madt. Let her be madt. She wore fancy eye glasses. If she can have glasses like that she can pay cash. A farmer's wife, too."

Minnie coughed. "I read the ad in this week's paper. Pat and you are offering many prizes for the best squash, the best melon, the tallest corn stalk, the biggest potato and things like that. Merchandise certificates are the prizes. What are they, Oscar?"

Oscar growled. "Ach, a merchandise certificate is goot on what the customer buys. To sell him something and think you make a profit. Then he gives you the certificate and that's your profit—just paper, that's what."

"But doesn't a store have to put on sales and ideas like this now and then?" Minnie asked. "Most of them do. Farmers like to come to town and visit and shop."

"They like to come to town and see what they can get free, that's what." Oscar said sourly. "I fix them. They always say, 'Oscar, it's about lunch time, ain't it? The lunchroom across the street has goot hamburgers.' You know what I tell them? I tell them, 'Go over and buy some then.' "

Minnie looked worried. "Oh, Oscar, I get so worked up sometimes. I wish I knew why people don't like us. Why are we always doing things right and they are always wrong?"

"You bet we are always right, Minnie. We got money in the bank to prove it. Money always burns a hole in other people's pockets. They itch till they empty their pockets. They are like little kidts with big eyes. They want everything they see, even if they can't pay for it."

"Is that wrong, Oscar?"

"It is wrong to want something you can't pay for." Oscar thundered, now warmed up to his subject. "Everybody wants everything—now. They think the money to pay for it will come in somehow. Ach, that's what Pat believes. Why else wouldt he spendt so crazy?"

"But you and he seem to eat all the time," Minnie said. "Why is there enough money for both of you every Saturday?"

"Because I watch the pennies. Because I take the discounts. Because I ain't afraidt to call a schpade a schpade. When Pat is foolish I tell him. Ach, the money he couldt have in the bank, if he didn't spendt so much, him and his family. And you know what he tells me?"

"What?"

"He even wants you and me to spendt more. He says, 'Oscar, you can't take it with you in a fertilizer spreader. Spread a little of it aroundt here and have some fun.' Ach, he's got nerve."

"Maybe we should spend a little bit more, Oscar. Couldn't we have whole milk on Sundays? We have powdered skim milk the rest of the week."

Oscar's face was grave. "Minnie, don't start slipping. Ach, there is nothing that is more fun than safing money and keeping it in the bank. Why iss so many business men going bankrupt every week? They don't know how to manage money. They don't know, like us, that money is always in style."

"But I'm not in style," Minnie murmured almost to herself. "The women in church laugh at me. I know it. Maybe it's those old button shoes that never wear out. I wish we hadn't opened your grandmother's trunk in the attic last spring, Oscar."

"Minnie," said Oscar, his chest expanding, "I will make you a bargain. You wear out those button shoes and I will let you buy a $2.00 hat at a bargain sale."

Minnie's eyes lighted. "You ARE good to me. Now I feel like going around to all the stores to get our ground meat cheaper. I can see that it pays to save."

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WHEN your Phillips *66* fertilizer field man calls on you, he has service to offer—service that can help you make more money.

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Want to sharpen up your sales force? Ask your Phillips man about the Phillips sales training workshops. This down-to-earth program can give your men many profitable pointers which will increase your sales. Also, Phillips offers free literature on all phases of soil fertility and fertilizer application methods.

Yet, Phillips service is even broader. For instance, Phillips sponsors a continuing program of aids and research grants to agricultural colleges. This program will help you make more sales in your area for years to come.

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"Personal Customer Service" Keynotes Arkansas Business

By EMMETT ROBINSON and ED WHITE

Joe H. Holland was on the telephone in his office at the Delta Farmers Service Co. in Marion, Ark. The conversation centered around the need of a customer—the person on the other end of the line—for an aerial applicator.

"I've contacted a fellow up in Missouri," Joe said. "He'll be down in a short time. He has a Stearman and he'll take care of you."

This is an example of the type of personal service which the Delta Farmers Service Co. extends to its customers. Personal service also has been a strong factor in the success of the business since it was established going on four years ago. In other words, Joe Holland and his assistant, Milton Shelby, believe in living up to that word **service** in the company name.

There was, for example, the farmer who needed a truck to haul his grain. He was unable to find one so Mr. Holland loaned him one for two weeks.

Often it's a sprayer that needs to be installed and calibrated. When that happens Mr. Holland or Mr. Shelby goes out and does the job for the customer, sometimes driving as far as 30 miles to do it. There is no charge except for the equipment or chemical. The company gets paid all right—in satisfied customers and repeat business.

A customer near Dell, Ark., is a case in point. Every year the customer calls and places an insecticide order. On the surface that's nothing out of the ordinary. But when you consider that the insecticide is loaded into an airplane and spraying adjustments are made without the customer ever seeing it, then that's something different.

As Joe Holland explains it, a good bit of the personal service work of the company arises out of the need for technical information. "Agriculture has moved from mule to machine. As technical as farming is these days with new machines and chemicals, many farmers just have to have help," he says.

Mr. Holland doesn't have a technical background. At one time a student of law, he was a captain in the military police and then served as tax assessor in the county before opening Delta. However, he makes a practice of "doing a lot of reading to keep up with what's going on."

The farm store man smiled. "Farmers ask about a lot of things and you have to find the answers."

He added that he relies on extension service material and literature from manufacturers and distributors. Meetings in the area are also on his agenda.

In pipe-smoking Milton Shelby, Mr. Holland has a man who can lend a ready hand in helping answer questions or calibrate a sprayer. An agriculture graduate of Mississippi State College, Mr. Shelby once worked with the Federal Crop Insurance Corp. He also has farmed, so he knows many of the problems of the farmer from first-hand experience.

"If we can't answer a question for a customer, we call the chemical companies," Mr. Holland said.

But not all of the calls result in a sale. For example, a customer called one day wanting to know if a certain chemical would control weeds in vetch and oats. Two calls to technical representatives of local chemical companies revealed that the chemical in question wasn't effective in this case.

Mr. Holland didn't sell the chemical to the customer. "Why sell him anything when you know it wouldn't do the job? That's bad business."

The personal service approach has paid off for the store. Mr. Holland started the business in a building containing about 22,000 sq. ft. of floor space. After one year he expanded to a new building with some 32,000 sq. ft. The floor of the building is truck bed high for easy loading.

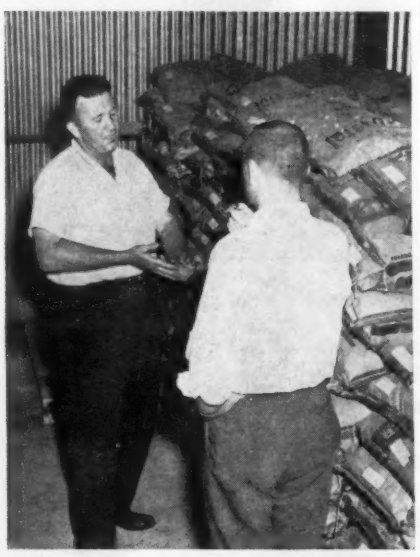
The first year of operation the company's gross was 63 times greater than the original investment. The following two years it jumped to 100 times and 122 times respectively.

The business centers around four counties in eastern Arkansas. The inventory includes general farm supplies and equipment—fertilizers, insecticides, herbicides, defoliants and other agricultural chemicals, spray rigs, hoes, cotton picker oil, spindle oil and the like. An anhydrous ammonia service is operated under a lease agreement with Monsanto Chemical Co. Plans are under way to go into liquid fertilizer next year.

The company operates two trucks and one car. Mr. Holland estimates that each vehicle is driven six or seven thousand miles each year in personal service type of work.

He says the business has no real slack season. One reason for this is because Mr. Holland urges customers to buy certain items such as fertilizers during the winter when discounts are offered by manufacturers. This not only saves the farmer money but also eliminates Mr. Holland's need for a large amount of warehousing space which would be necessary if all fertilizer orders were filled in the spring. In addition, he helps customers with off-season problems such as killing young willows in drainage canals.

The business is operated on a small margin of profit—1.55%. "That," says Mr. Holland, "is in keeping with the farmer's economic position today."



HELPFUL ADVICE—Helping farmers solve technical problems is an important part of the service which the Delta Farmers Service Co. offers customers. Joe Holland (left) discusses one of these problems with a regular customer.

PERSONAL SERVICE—Joe Holland (left) and Milton Shelby of the Delta Farmers Service Co. in Marion, Ark., stress the importance of personal service to their customers. Says Mr. Holland, "It makes for satisfied and repeat customers."

HERBICIDE

(Continued from page 9)

layer for about two weeks then broke into chunks and finally melted. Under those conditions the pellets appeared to sink through the ice, due to absorption of heat from the sun and subsequent local melting of ice adjacent to the pellets, and presumably were deposited on the lake bottom.

"Where a calculated concentration of 20 ppm. had been applied no milfoil was present nor were there any other types of aquatic vegetation. The boundaries of the plots were as well marked by absence of vegetation as though a mechanical shield had been placed on the bottom and the chemical applied inside of the area so shielded.

"These tests indicate that applications of systemic herbicides to the bottom of the lake hold considerable promise in the control of rooted aquatic plants. They also show that a very practical method of application has been found, namely spreading granular herbicidal particles upon the ice in early spring.

"The relatively low concentration of 2,4-D used will not cause injury to fish or other animal life in the treated water. Neither is it sufficient to cause injury to trees and shrubs on the banks of treated lakes or ponds. The roots of such plants frequently are in contact with either the water or mud at the bottom but the maximum concentration possible (20 ppm.) is not expected to kill woody vegetation," they concluded.

Reasor-Hill says the best method for applying Granular Weed Rhap-20 to ice is with a spreader at a rate of 100 lb. an acre.

For spreading from a boat, the company feels 1 lb. to each 430 sq. ft. is sufficient.

In one test instance, at Magnolia, Ark., the 2,4-D pellets "killed almost all submerged weeds and the lake, once almost inaccessible to fishermen, is now ready for good fishing," said biologist Thomas W. Wright.

AQUATIC WEED TEST—The picture at left, taken early in June, shows a lake near Jacksonville, Ark., shortly before Reasor-Hill's Granular Weed Rhap-20 was applied. The second picture, taken July 6, shows the same lake with the weed killer's effects visible. The weedy area in the rear of the second picture was not treated.

FARM SERVICE DATA

Extension Station Reports

Up-up-up—that's the story of corn yields in Alabama. This fall, according to estimates, Alabama farmers will harvest 28 bu. acre, a per-acre harvest second only to the record 30 bu. of 1955. The expected yield of 54,492,000 bu. will be the third highest in history. What makes this crop particularly impressive is the fact that it will be harvested from only 2 million acres. In 1945 Alabama farmers planted nearly 3 million acres and harvested much less than they will bring in this fall.

"These records may not look significant when compared to the big corn-growing states in the Midwest," said O. N. Andrews, Alabama Polytechnic Institute Extension agronomist. "But the important thing is the progress which Alabama farmers have made in corn production in 15 years. Until 1945 our average yield never exceeded 15 bu. acre."

How did the increase come about? "In 1946," explained Mr. Andrews, "the API Extension Service initiated a 'more corn per acre' campaign, setting a state goal of 30 bu. acre. County agents' main effort in the campaign was to get farmers to conduct corn demonstrations. In special patches, farmers were urged to use proper fertilization and spacing, good hybrids, and early lay-by dates."

These demonstration plots consistently yielded 50 bu. acre, and many of them produced over 100 bu. Seeing is believing, and when other farmers saw these results, they began to use better corn production practices in their own fields.

"There has also been an increase in the use of hybrid seed," added the specialist. "Only 3% of the 1946 acreage was planted to hybrids. Today, 84% is claimed by hybrid varieties. Better seed and better farming practices add up to more corn and higher profits."

★

A new kind of contour terracing for semiarid lands—wide, level benches separated by even wider strips of natural slope—is being investigated by U.S. Department of Agriculture scientists who are seeking ways to check erosion and conserve runoff for crop use.

The tests are being conducted at USDA's Southwestern Great Plains Field Station near Amarillo, Texas. Soil researchers A. W. Zingg and V. L. Hauser have results from only one crop year, but the results are good enough to warrant further testing.

The scientists constructed 4 level benches totaling 13 acres on a 40-acre plot with a slope ranging from 1 to 1.8 percent. The benches vary from 1,100 to 1,400 feet in length and from 80 to 145 feet in width.

The benches are separated by unleveled strips of land that contribute runoff water to the benches. The ratio of contributing area to bench area is 2 to 1. Maximum depths of cut and fill were about 1 foot.

Annual rainfall averages about 17.6 inches at Amarillo. Since no runoff data were available, approximations were derived from data from four areas of Texas and Oklahoma where soil and terrain are similar. On the basis of these approximations, the researchers estimated runoff each year at zero to 5.7 inches, with an annual average of 1.1 inches.

Grain-sorghum yields over an 18-year period at the Amarillo field station averaged 16.8 bushels per acre. A 1956 irrigation study at Amarillo showed an increase in grain-sorghum yield of 10 bushels per acre for each inch of irrigation water, to a maximum of about 100 bushels.

Rainfall in the Amarillo area frequently comes in downpours rather than in showers. The scientists realized they could not hope to trap all the runoff. They also knew they could not use the ground-stored water as efficiently as water used in the irrigation study. They concluded they could reasonably expect an increase of 5 bushels of grain sorghum per acre for each inch of runoff trapped.

The early variety of Hegari grain sorghum was seeded on the four benches. The intervening strips of normal slope supplying runoff water are in sorghum-wheat fallow.

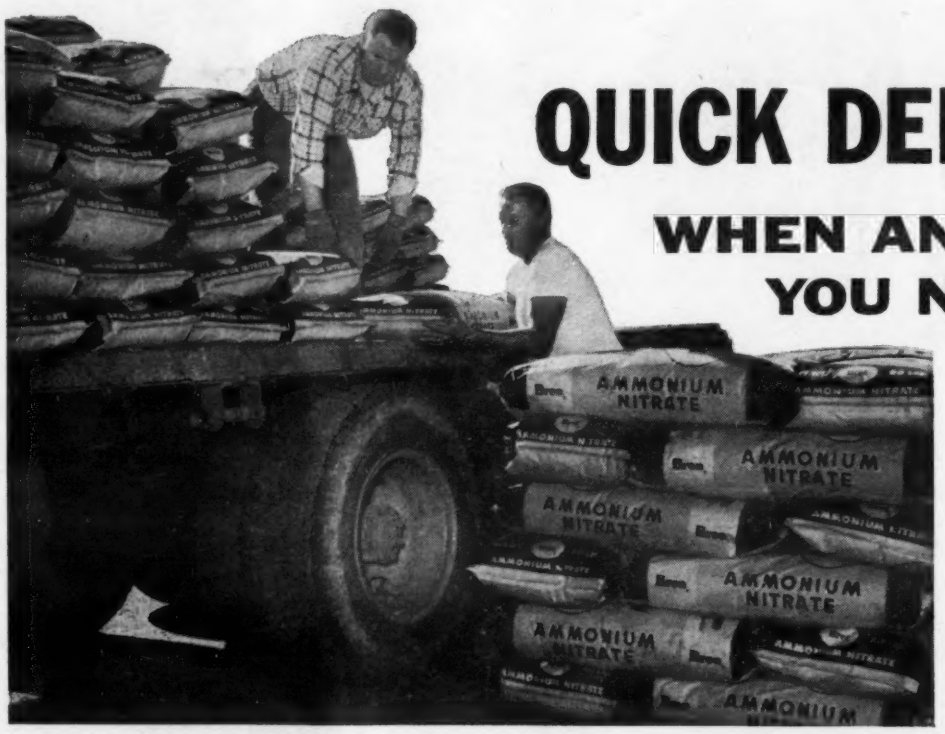
The single crop year during which the test was made was unusually moist. At seeding time soil on the benches held more than 7 inches of available water and the contributing areas held almost 3 inches. Similarly, rainfall during the growing season, June 15 to Oct. 15, was recorded at 9.35 inches as opposed to the 8.67-inch average for the season.

Grain yield on the benches was 80.3 bushels per acre. Yield on the contributing area totaled 40 bushels per acre. Both of these figures were somewhat higher than anticipated, and the scientists credit most of it to the better-than-normal moisture conditions. Although these results are highly encouraging, additional tests are needed, particularly in times of average rainfall, to evaluate the feasibility of contour benching.

Conservation benches serve the same function as terraces in controlling runoff. Consequently, adequate outlet capacity must be provided at the bench ends to prevent overtopping of the ridges during severe storms.

In years of above-average rainfall, tilling, planting, and cultivating may be difficult owing to wet ground in the benches. Weed control in wet years is also likely to be difficult and may require use of chemicals.

The initial test indicates that wide benches create natural reservoirs for runoff and the scientists hope that increased production may more than offset the cost of construction.



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WEED OF THE WEEK

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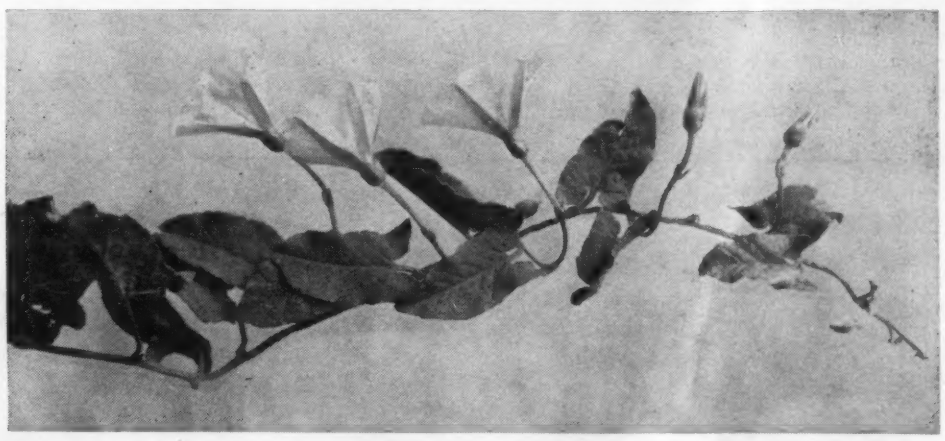

Field Bindweed

(Convolvulus arvensis)

How to Identify

This weed is also known as wild morning glory, creeping Jenny, or possession vine. It is a perennial, with slender stem, often twining around objects. Its flowers are pinkish in color.

Characteristics of Bindweed

One of the most troublesome of weeds, the bindweed has a deep and very extensive root system which makes it difficult to control by cultural means. It spreads both from seeds and from creeping lateral roots. The seeds can remain viable in soil for as long as 30 years, according to the U.S. Department of Agriculture. Thus, bindweed seed left in the soil after the original stand has been killed, is a constant potential source of reinfestation. Seedlings will continue to emerge for many years thereafter and must be destroyed before they become established as perennial plants.

Damage Done by Bindweed

Because of its prolific growth and its entanglement with economic crops, bindweed poses expensive and difficult problems at harvest time in a number of grain crops, Whereas the weed is easier to control in cultivated crops, it still robs the wanted plants of moisture and soil nutrients, and beyond that, puts growers to additional expense and effort to control the weed.

Control of Bindweed

Control by tillage and cropping requires intensive work and sometimes years of effort. (Different crop rotations are recommended in accordance with rainfall, climate and other considerations.) The USDA has suggested the use of a number of chemicals for control of bindweed. Among these is 2,4-D, application of which must be repeated for a number of successive years for complete eradication. Spraying is most effective when used in combination with intensive cultivation or in growing small grain crops, corn, and perennial grasses. Such crops, tolerant to 2,4-D, greatly increase the effectiveness of the treatment by competing with bindweed plants weakened by the chemical. If areas of bindweed total only a few square rods, application of soil sterilants may be useful. However, it must be remembered that this may cause the loss of soil productivity in the area for a number of years. Sodium chlorate can be used, but the fire hazard involved reduces the desirability, USDA says. Monuron herbicide and boron compounds are also suggested, as is common salt for sterilization.

Illustration of Field Bindweed through courtesy of U. S. Department of Agriculture, Beltsville, Md.

Commerce Department Shows Production Figures on Group of Fertilizer Chemicals

WASHINGTON — Production of anhydrous ammonia in the U.S. was slightly higher in July, 1958, than it was the same month of the previous year, according to preliminary data just released by the U.S. Department of Commerce, Bureau of the Census. The figures were 294,669 tons for July, 1958 and 293,661 tons for the same month a year ago. Production in June, 1958, however, was greater than that for July, this year. June's total was 336,309 tons.

Ammoniating solutions made in July, 1958, amounted to 30,283 tons as compared to 35,429 tons the month before. Figures for July, 1957, were not available, the bureau said.

Fertilizer grade ammonium nitrate increased in production in July as compared to both the month before and the same period of a year ago. Tonnage for July, 1958, was 162,311 tons; for June, 1958, 139,007 tons; and for July, 1957, 161,363 tons.

Nitric acid output for July, 1958, was higher than that of the previous month, but considerably below that of July, 1957. The figures announced by the Bureau of the Census were 191,792 tons for July, 1958; 175,535 tons for June, 1958; and 210,125 tons for July, 1957.

Phosphoric acid was produced in the amount of 139,843 tons in July, 1958; 139,295 tons for June, 1958; and 120,108 tons in July, 1957. These figures were based on 100% P_2O_5, the report stated.

Production of sulfuric acid, 100% H_2SO_4, remained at a consistent level in all three of the months accounted for in the report. For July, 1958, the amount produced was 1,207,495 tons; for June, 1958, 1,216,192 tons; and for July, 1957, the output was 1,291,571 tons.

Spencer Announces Two New Fertilizer Solutions

KANSAS CITY, MO.—The development of two new fertilizer solutions linking low salting-out temperatures and low free ammonia content to raw materials cost savings has been announced by Spencer Chemical.

Properties of the new solutions, named Spensol 430 (20-68-6) and 440 (22-66-6), should enable granulators of mixed fertilizer to achieve significant savings, Spencer says. Reasons given by the makers are:

1. Less sulphuric acid will be required because of the low free ammonia content of the solutions.

2. Eliminating some of the sulphuric acid in a formula makes it possible to derive more P_2O_5 from normal superphosphate. It also means less plant "smog" creation, a problem in many mixing plant areas.

3. In granulating low nitrogen ratios the low free ammonia of the solutions enables the mixer to use more low cost anhydrous ammonia as a nitrogen source.

4. The solutions contain only 6% water, meaning less freight, less drying and recycle time.

Spensol 430 (43.0% nitrogen) has a fixed nitrogen content of 62% and a salting-out temperature of 14° above zero. Spensol 440 has a fixed nitrogen content of 59% and a salting-out temperature of 17° below zero. According to the announcement, previous solutions with comparable salting-out temperatures contained fixed nitrogen in a range from 48 to 54%. Both new solutions are named in accordance with the new solution nomenclature system recently adopted by the industry through the efforts of the National Plant Food Institute. The basic number denotes the percentage of nitrogen in the solution and the numbers in parentheses indicate the percentages of ammonia, ammonium nitrate and urea in the total nitrogen content.

PESTICIDES

(Continued from page 1)

BHC was also produced in greater amounts in June, the report states. Output for the latter month was 873,766 lb. and for July, 797,258 lb.

The production of 2,4,5-T also decreased in July. June's output totaled 564,333 lb., and for July, production was tallied at 484,064 lb.

The Tariff Commission notes that all weights given in the report are on the "dry basis," which is explained as being the total weight of the material, excluding liquid diluents.

RANGE

(Continued from page 1)

vice president of NPFI; and remarks by George Monkhouse, conference chairman.

Papers to be presented, and their authors, follow:

"Range Fertilization in the San Joaquin Valley," by Joseph Urrutia; "Range Fertilization in the Sacramento Valley" by J. W. Sevier; "Range Fertilization in Oregon" by Thomas Jackson; "Mountain Meadow Fertilization" by Forrest Willhite; "Range Fertilization in Wyoming" by Dr. Dixie Smith; "Statewide Range Fertilization Results" by Dr. William E. Martin; "Extending Green Feed Period with Fertilization and Seeding" by Roche Bush; "Legume Fertilization" by Dr. William Williams; "Soil Survey—Nutrient Deficiency Status in California" by R. A. Evans; and "Range Fertilization Economics" by R. L. Luckhardt.

Panels will be presented on California Range Fertilization, with Malcolm F. Rice as moderator and Range Fertilization in the Western States, with Charles W. Bourg the moderator.

Lester Berry, extension range management specialist, will present a summary and Dr. R. Merton Love, professor of agronomy at the University of California, will be the banquet speaker.

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Florida Speaker Emphasizes Need for More Farm Science

MIAMI BEACH, FLA.—The 15th annual convention of the Florida Fruit & Vegetable Assn. attracted some 1,500 farmers and representatives of related industries such as suppliers, packers, processors, and transportation men, here Sept. 24-26.

The theme of this year's meeting, "Food for Thought," was a switch from last year's convention program which was titled "Progress Through Research."

Speakers appearing on the program included Roy Vandegrift, president of the association, Pahokee, Fla.; Hon. Campbell Thornal, Florida Supreme Court Justice; Hon. Dante Fascell, U.S. Congressman; Hon. Tom Beasley, speaker designate of the Florida House of Representatives; W. J. Klein, vice president and director of sales promotion of Allis-Chalmers Mfg. Co.; Carroll P. Streeter, editor, "The Farm Journal"; Hon. Spessard L. Holland, U.S. Senator from Florida; and Hon. Herman E. Talmadge, U.S. Senator from Georgia.

G. O. Robinson, executive secretary, regional advisory council of nuclear energy, Atlanta, told the group that food production is not increasing as rapidly as are population demands. "World population is increasing at the rate of over 20 million persons a year," he said, "and more than half of the two billion people in the world, do not get enough to eat.

"To keep food production in pace, there must be ever-increasing production from the land and this advance must be based upon the work of plant and animal scientists," he declared. "The frontiers of farm science and land development must be pushed forward at an ever-increasing rate to provide for world population growth and to improve living standards."

Mr. Robinson continued: "In agriculture the improvement of crops, the creation of new plant varieties, the reduction of insect damage, the preservation of food, and the development of more effective fertilizers through the use of atomic radiation will be amazing sagas of progress."

In elaborating on these subjects, he explained how agricultural research is being stimulated through the use of radioactive materials as tools for unlocking of secrets of the growth of plants and animals.

"The major applications of radio isotopes to agricultural problems have been concerned with soils, fertilizers, photosynthesis, entomology, and animal and plant nutrition," he said.

Using large charts to illustrate his talk, he explained how radioisotopes of phosphorus, sulphur, calcium, copper, molybdenum and zinc are being used to investigate nutrition problems. The charts showed how radio tracers are being used to determine the path, rate of entry, and movements of materials in plants.

In the field of plant nutrition, specific atoms of elements are traced to prove that fertilizer can often be applied more effectively through leaves than through the roots. "For example," said Mr. Robinson, "if you put inert phosphorus in the ground and apply radio phosphorus to the leaves and find a high percentage of radioactive phosphorus in the plant, it obviously got there through the foliar application. Radio isotopes have shown conclusively that plants absorb nutrients not only through the roots but also through the foliage, the fruit, the twigs, the trunk, and even the flowers. Tracer studies show that certain plant nutrients applied to the leaves in soluble form result in as much as 95% uptake by the plant."

Mr. Robinson added that experiments in California and Oregon have shown that spraying dormant trees with fertilizer improves the growth of the fruit the next year. "It has been shown," he said, "that within 24 to 48 hours, even in mid-winter and at below freezing temperatures, radioactive zinc movement in the branches can be traced 18 inches to 2 feet above the point of application."

On the other hand, studies with radio calcium were said to have shown that foliar application does not result in the movement of this nutrient to root sections. This was mentioned as being of importance in the growing of some plants such as strawberries.

Pointing to the importance of this type of research, Mr. Robinson said: "American farmers are spending more than a billion dollars a year for commercial fertilizers, and isotope research has found many ways to get greater rates in crop yields with this money."

Other subjects covered by Mr. Robinson included plant breeding through the use of irradiated seeds, food preservation through the use of irradiation, and the control of diseases and insects through the use of irradiation.

The keynote address of the convention, "Food for Thought," was delivered by W. J. Klein, vice president and director of sales promotion of Allis-Chalmers Mfg. Co. Mr. Klein stressed the importance of public relations, advertising, and food education. He said: "All of us agree that nutritious foods are an essential part of everyone's good health, but we must tell it to everybody and then sell it to everybody, in every way we can. At all times it should be the duty of the food industry to maintain the customer's confidence in our good staple foods, and to help prevent any hysteria for unwise change in diet. This is a never ending sales job which can only be done through advertising and promotion."

Further emphasis on promotion was made during a marketing symposium.

Carroll P. Streeter, editor of the Farm Journal, warned that farmers are faced with a big decision regarding who is going to control farming.

Oregon Weed Meeting To Stress Perennials

CORVALLIS, ORE. — Control of perennial weeds, such as wild morning glory, will receive top billing at next month's Oregon Weed Conference.

The seventh annual meeting will be held Nov. 12-13 in the Sacajawea Hotel at La Grande, Ore. Larry Rowse, General Electric Co., Portland, is chairman. Use of new chemicals and improved weed-control methods will be reported at the conference.

Wild morning glory has become an especially troublesome problem, particularly in the Columbia Basin, says Rex Warren, Oregon State College farm crops specialist. The morning glory is found across the state, however, he pointed out, with more than 300,000 acres of Oregon farmland now infested with the weed.

Other perennial weeds that will receive critical study at the conference include Canada thistle, Russian Knapweed, whitetop, nutgrass, and quackgrass.

New chemicals to be discussed at the conference include TBA, PBA, Eptam, and 2,4-DB, Mr. Warren said. Representatives of chemical companies will be on hand at the meeting to help explain use of these new products.

Information on ways to control weeds in cereal crops will be discussed by Russell McKennon, feed department, Pendleton Grain Growers; Dean Swan, agronomist at the Pendleton branch experiment station; and Virgil Freed, OSC agricultural chemist. The panel will be moderated by Victor W. Johnson, Umatilla county extension agent.

Control of weeds on rangelands will also receive attention at the meeting, with a report by Don Hyder, range conservationist at the Squaw Butte-Harney branch experiment station, scheduled to open the second day of the conference. There will also be a session on industrial weed control, and a report on the state department of agriculture's part in weed control.

The group will hold its business meeting the afternoon of Nov. 12.

Announces Promotion to Marketing Manager

ASHLAND, OHIO — Donald H. Paulson, marketing research manager for F. E. Myers & Bro. Co., here, has been named marketing planning manager, E. M. Myers, vice president in charge of sales, announced.

Working directly under the supervision of E. M. Myers, Mr. Paulson will be responsible for the company's product managers, advertising manager, personnel development manager, and market research manager. He formerly was employed by Sears and Roebuck in Dayton, Ohio, and by the Dayton Pump and Manufacturing Co., as training and service manager and OEM sales representative.

J. M. Nunn

TRANSFERRED—The Pacific Coast Borax Co. Division of the United States Borax & Chemical Corp. has announced the transfer of J. M. Nunn, agricultural sales department, to Jackson, Miss. Mr. Nunn, who has worked out of the company's Dallas and Amarillo offices during the last six years, will cover the tri-state area of Arkansas, Louisiana and Mississippi. He will handle products such as borate herbicides for agricultural and industrial use and sodium-calcium borate fire-retardant compounds. A native of Bonham, Texas, Mr. Nunn attended college at North Texas State in Denton, Texas.

TOBACCO ACREAGES

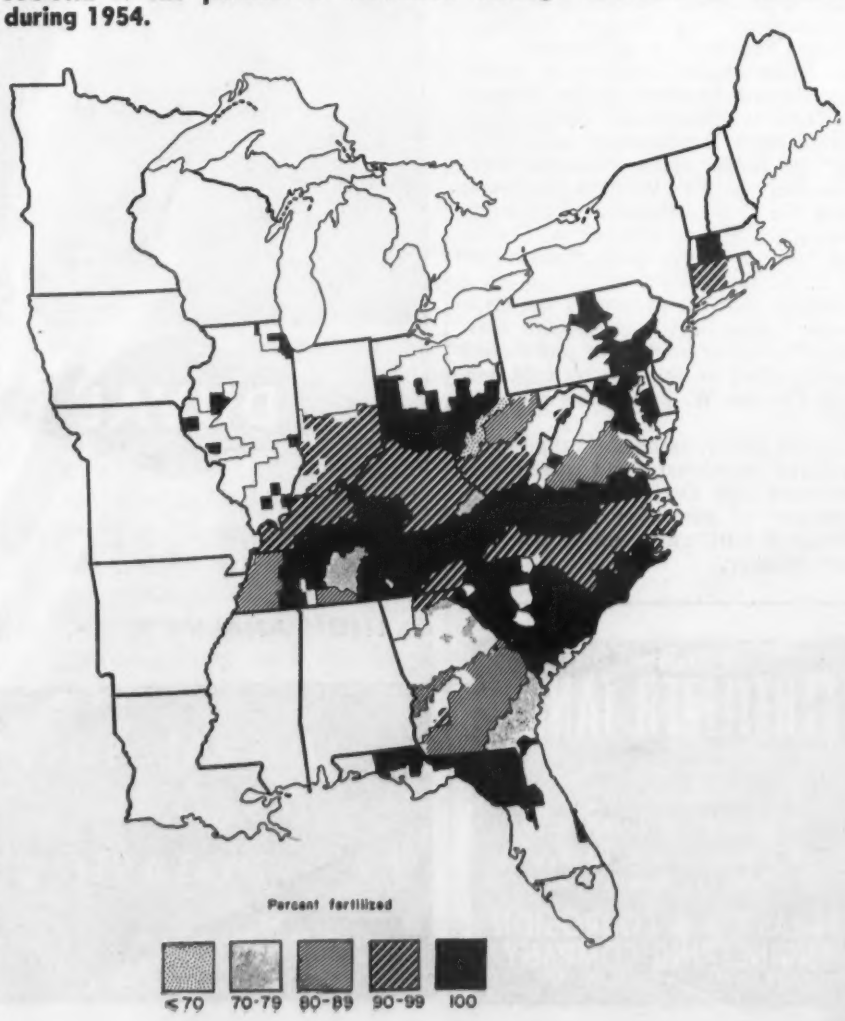
(Continued from page 1)

Coastal Plains areas of Georgia and the Maury-Hagerstown phosphatic limestone derived soils of central Tennessee, 89% or more of the acreage of all major tobacco-growing areas is fertilized.

Nitrogen rates per fertilized acre vary considerably between the different areas but appear to be related closely to the type of tobacco grown. Cigar tobacco grown under continuous culture in the Connecticut Valley receives in excess of 200 lb. N an acre. Cigar tobaccos grown in northwestern Florida, north-central Pennsylvania, and southwestern Ohio receive from 84 to 163 lb. N an acre.

Nitrogen rates generally are limited to 60 lb. or less an acre on the flue-cured or bright tobaccos grown in the Piedmont and/or Coastal

FIGURE 1. The percent of harvested acreage fertilized for tobacco during 1954.



Plain areas of Virginia, North Carolina, South Carolina, Georgia, and Florida. The bright yellow color of this type of tobacco is one of its most valued characteristics and for this reason nitrogen is controlled within narrow limits.

Maryland tobacco, a light-colored air-cured type, averages 49 lb. N an acre. Burley tobacco, grown largely in Kentucky, eastern Tennessee, and southern Ohio and Indiana, is fertilized with a wide range of N rates as is the dark fire-cured and air-cured tobacco grown in western Kentucky and Tennessee.

Phosphate rates, which are in excess of 100 lb. P_2O_5 an acre, are common over most of the major tobacco growing areas. This is of interest in view of the low phosphorus requirement of tobacco. Phosphate rates below 80 lb. an acre are used only in parts of Pennsylvania, western Tennessee, the mountain area of North Carolina, and the Piedmont area of South Carolina.

Potash rates in excess of 200 lb. an acre are applied in the Connecticut Valley, north central Pennsylvania, and southern Ohio and Indiana. Rates ranging from 140 to 180 lb. K_2O are used in Florida and southern Georgia, and the Bluegrass, Knobs, and Eastern Mountain regions of Kentucky. In most of the remaining major tobacco areas 80 to 130 lb. K_2O an acre are used, although lower rates are applied on the loessial soils of western Tennessee.

* *

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(2) Ibach, D. B., Adams, J. R., and Markeson, C. B.
1957. Fertilizer Used on Crops and Pasture in the United States. 1954 Estimates. U.S. Dept. Agr., Statis. Bul. 216, 55 pp. illus.

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TABLE 1. Tobacco: Acreage harvested and percent fertilized, and estimated use of fertilizer and primary plant nutrients, by states, 1954.

State	Total acres harvested(3)	Harvested acres fertilized (2)	Fertilizer applied[1]	Rate of application of nutrients per fertilized acre (2)		
				Nitrogen	Available phosphoric oxide	Potash
	1,000 acres	Percent	1,000 tons	Pounds		
Connecticut	14	2/ 99	33.5	248	154	211
Florida	24	100	19.9	67	126	178
Georgia	102	80	80.4	46	145	161
Illinois	<1	100	<.1	133	189	133
Indiana	9	99	7.3	144	185	201
Kentucky	277	98	199.3	79	153	149
Maryland	48	100	24.8	2/ 49	2/ 83	135
Massachusetts	6	100	9.8	211	106	203
North Carolina	670	99	---	53	109	90
Ohio	16	2/ 100	11.0	85	165	263
Pennsylvania	29	100	11.4	33	66	98
South Carolina	121	100	83.2	62	124	125
Tennessee	97	96	56.7	55	104	111
Virginia	122	98	92.5	40	119	100
West Virginia	3	78	1.7	72	142	104

[1]Estimates based on data from Soil and Water Conservation Research Division, U.S. Department of Agriculture.
[2]Revised.

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FIGURE 2. The estimated rates of N used per fertilized acre for tobacco during 1954.

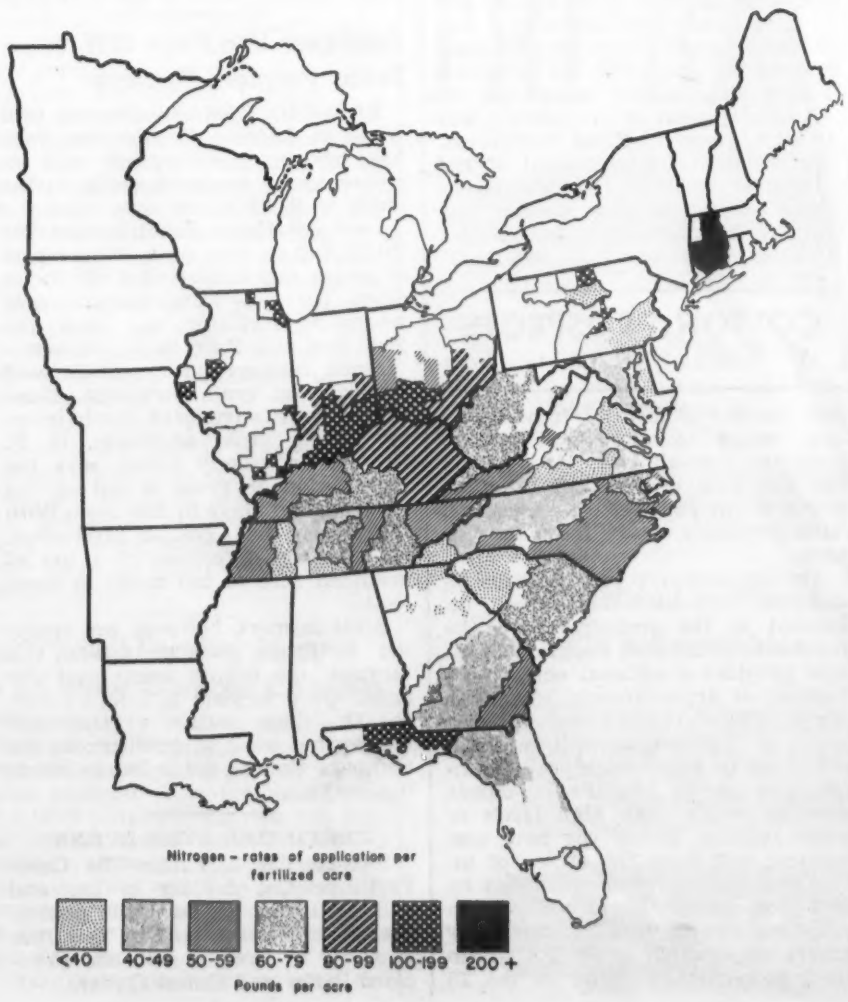


FIGURE 3. The estimated rates of available P_2O_5 per fertilized acre for tobacco during 1954.

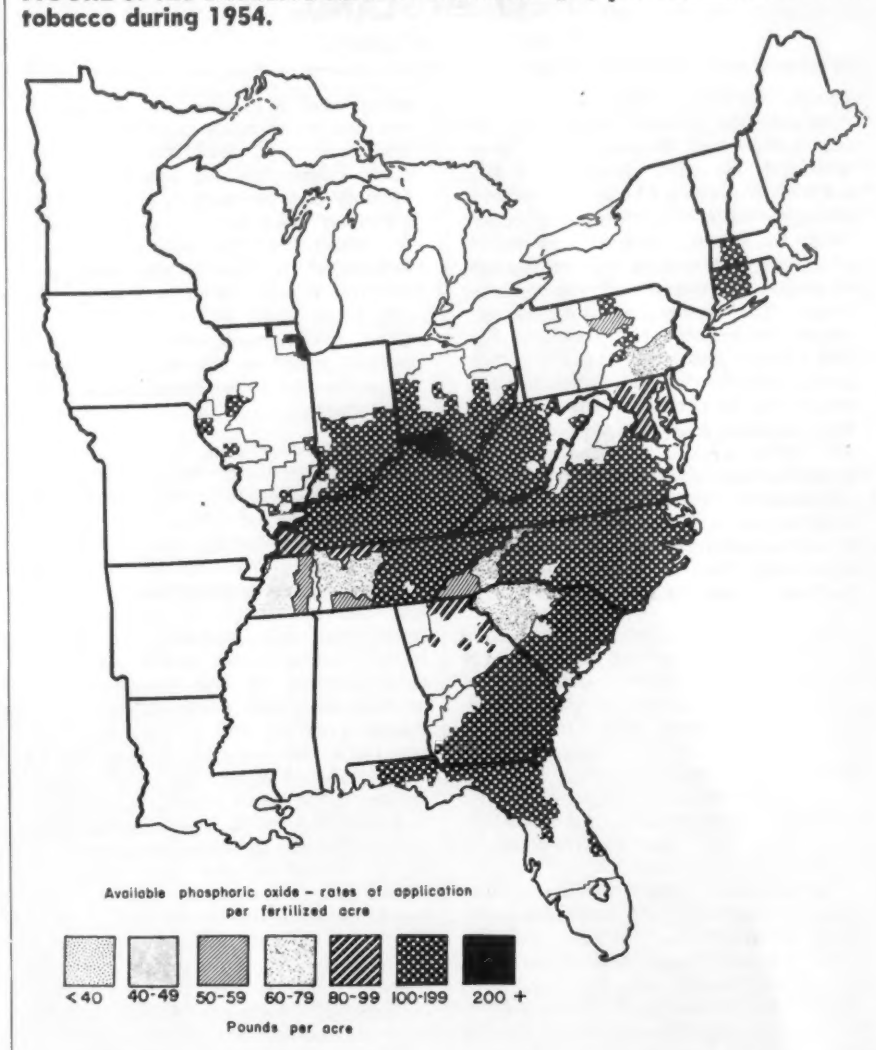
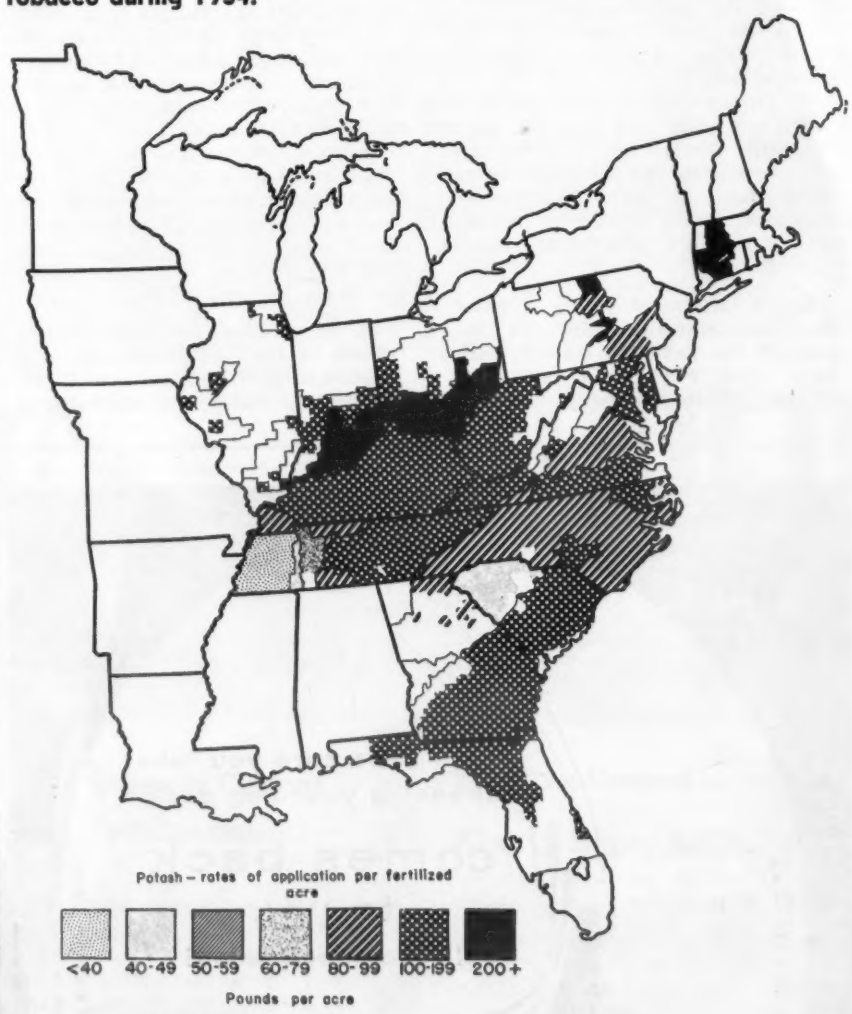


FIGURE 4. The estimated rates of K_2O used per fertilized acre for tobacco during 1954.



MCA Meeting Set

WASHINGTON—The eighth Semi-Annual Meeting and Winter Conference of the Manufacturing Chemists' Assn. will be held Nov. 25 at the Hotel Statler in New York.

A day-long series of panel discussions on subjects of interest to chemical industry management will begin at 10 a.m. The meeting will be concluded with a reception and banquet that evening.

The sessions are designed to orient executive and staff personnel of MCA member firms with current trends in the chemical industry. Approximately 1,000 persons attended the 1957 meeting.

HORTICULTURIST NAMED

STILLWATER, OKLA.—Dr. Samuel C. Wiggans has joined the Oklahoma State University horticulture department staff. He has been appointed associate professor of horticulture, and his main duty will be the conducting of fertilizer and irrigation experiments with fruits, vegetables and ornamental plants.

NEW ENGLAND

(Continued from page 1)

ences between rural and urban communities. Urbanization of farming areas has become more pronounced, he said, because of the suburbanization movement, changes in the agricultural economy to fewer, larger, and more efficient farms, and the influences of radio, television and super-highways. The suburbanization movement has created tax problems for the farmer and this, plus attractive prices offered by city folks for his property, has caused him to (1) sell out and move further out into the rural area, (2) subdivide his property and continue with a small specialized farming operation as long as he can, or (3) go out of farming entirely and enter a new field connected with the suburbanization of his area.

All of these factors have created a changing marketing problem for fertilizer, I. F. Fellows, professor of agricultural economics at the University of Connecticut, said. One half of the farms in New England have ceased to operate in the past 25 years, he declared, while at the same time new technologies and scientific discoveries have opened the door to scientific agriculture.

"Along with these changes have come some important farm management implications," Prof. Fellows said. "Larger farms and more purchased materials call for increased amounts of capital both for long-term investment and for operation. Rising unit costs of inputs in the face of steady or declining unit output returns, have placed all types of farmers in a 'cost-price squeeze'.

"The commercial farmer in New England today must be a top-flight business manager. Profits for the farm family will depend upon his ability to cope with a situation where the profit on each unit is very small yet gross returns may be in the neighborhood of $100,000. Under the conditions, small errors in management can have disastrous results on profits."

There will need to be a great deal of "statesmanship" on the part of the industry selling fertilizer, Prof. Fellows said. This means (1) the industry salesman must have a greater knowledge of the needs of each particular user and how well fertilizer can help each unique farming operation. (2) It will not be sufficient that the fertilizer used by an operator pay for itself, but the salesman must determine if this is the best use for the funds which are involved. (3) Care must be taken to assist these operators in making a total overall profit in the farm business in order to keep them profitable customers.

In the afternoon, the conference reviewed fertilizer requirements in the area for specific crops and uses. The prospect of larger more commercial dairy cattle operations was pointed out by T. M. Adams, head, department of agricultural economics, University of Vermont. These operations will probably be in the higher taxed areas closer to urban developments in the southern part of New England, while further north forage growing will continue to supply both the commercial operations and scattered small family milk-herds in the more rural areas, he said.

A definite trend toward specialization in potato growing was noted by A. L. Perry of the department of agricultural economics and farm management, University of Maine. Farmers believe efficient operation in one or two enterprises may be more profitable than the "spreading-of-the-risk" doctrine of old-style all purpose farms, Mr. Perry said.

"This trend which will result in fewer but larger potato farms can have considerable influence on the sales policies of fertilizer companies," Mr. Perry said. "Potato growing is a high cash cost as well as high risk enterprise. There will be seasons when growers will not make profits; established banking institutions will be more and more hesitant to extend credit beyond a safe net worth ratio. Therefore fertilizer companies may need to increase their willingness to finance not only the cost of fertilizer but some of the other production costs as well."

Several factors will affect future trends of fruit and vegetable production in New England, said W. H. Drew, department of agricultural economics, University of New Hampshire. The area grows only one-fifth of its requirements for consumption, he said, and it is a question of whether growers in New England will make improvements in quality and volume which will allow them to compete with the industry in other parts of the country. Those farmers who are specializing are mechanizing their operation, irrigating and moving to lower-taxed land away from the urban areas. Contract farming is coming into the picture, he said, and will increase as farmers standardize fruit and vegetable quality.

The swift changes in the tobacco situation in Connecticut were described by P. L. Putnam, head of the agricultural economics department at the University of Connecticut. With manufactured binder now a rule in the cigar industry, Connecticut's binder tobacco acreage has declined from 14,000 acres in 1954 to 3,200 acres this year. Shade grown wrapper tobacco has held steady at around 8,000 acres. Up to this point farmers have been relieved by the soil bank but next year this will not be available, the speaker said. Hence, the economic worm has turned very fast for the tobacco farmer in this state and future prospects for fertilizer sales must be judged accordingly.

A special guest at the meeting was Richard Bennett, Farm Fertilizers, Inc., Omaha, Neb., president of the National Plant Food Institute. Toastmaster at the evening banquet was Dr. W. H. Garman, Northeastern Regional Director of the NPFI.

AT FLORIDA CONFERENCE—The three officers of the Florida Fruit and Vegetable Assn. were reelected at the group's 15th annual convention at Miami Beach Sept. 24-26. The trio, shown above, are Roy Vandegrift, president; Joffre C. David, secretary-treasurer; and J. Abney Cox, chairman of the Florida Potato Council. The three pictured above will serve another term, as will Rudolph Mattson, Florida Fruit and Vegetable Assn. vice president who was absent when photo was taken. (Story of meeting, page 18.)

COTTON PROSPECTS

(Continued from page 1)

gate income of farmers from cotton land would be approximately 15% since the over-all gross income gain for the 1958 crop of $344 million would be in part reduced since soil bank payments will be lower for this crop.

For the next crop year, acreage allotments have been substantially increased in the amendment to the farm act by the 85th Congress which now provides a national acreage allotment of approximately 16 million acres. USDA officials believe that much of this increase will be available only to those large scale farmers who prefer liberalized acreage controls rather than high levels of price support. Under the new law, farmers will have the choice of increasing their acreage allotments by 40% for which they would obtain price support at 65% of parity, or others may prefer to remain within their proportionate share of the 16 million acreage allotment base for which they would obtain the prevailing level of support available under the old provisions of the farm law.

On the basis of USDA estimates, it is expected that the average price support reflected price for cotton from the next crop will be approximately 71% of parity. The amended law requires cotton producers who operate within acreage allotments under the older provisions of the law to turn over their production under loan default procedure within 60 days after the close of the crop loan program. USDA officials, however, are confident that the market price for cotton will remain well above the low loan level for those farmers who accept the 40% acreage allotment excess over the 16 million acre base at 65% of parity support.

It is believed at USDA that the farmers who exceed the cotton acreage allotment base will be able to produce cotton at lower costs per pound than the market which may prevail next year.

Again it is observed that official opinion indicates a comfortable market atmosphere for the sellers of crop chemicals to the cotton producers this coming season.

Fertilizer Use Pays Off, Texas Farmers Declare

REFUGIO, TEXAS — Several field trials in Refugio County this year have shown that fertilizer will increase grain sorghum yields by as much as 2,000 lb. an acre.

Last fall Erwin Zabel applied 200 lb. 16-20-0 an acre on a 40-acre field of maize and harvested 4,400 lb. of grain per acre. On another field where no fertilizer was used, the yield was only 2,400 lb. to the acre.

Since farmers have seldom used fertilizer on grain sorghums, these results have stimulated much interest among grain producers. D. F. Bredthauer, county agent, says the fertilization of grain is out of the experimental stage in this area. With the present high cost of production, he says the difference of a ton of grain an acre is too much to overlook.

Some farmers, however, are applying fertilizers without taking soil samples, the county agent said. He urged them to send in samples during the slack season, so they will know what kind of fertilizer to use and have time to get it before planting season.

FERTILIZER FIRM OPENS

SANTA CRUZ, CAL.—The Coast Fertilizer Co., dealing in bag and bulk fertilizers for farm and garden, opened here recently. The new firm is owned by Fred, Joseph and Francesco Pyffer and Ernest Gaiser.

FERTILIZERS TO CONTROL LEAF SPOT?

LUBBOCK, TEXAS—A few farmers are beginning to believe that heavy applications of nitrogen fertilizer will keep down angular leaf spot in irrigated cotton.

One field on the Roy Formway farm is almost free from the blight, and this is in an area where the angular leaf spot is quite common. Mr. Formway applied 110 lb. nitrogen an acre to his cotton.

In some West Texas areas the leaf spot became so damaging that farmers began seeking some variety that would be completely resistant. Such a variety has not yet been found, however.

In Martin County where the leaf spot has been prevalent, farmers who apply plenty of fertilizer say their cotton is damaged less than where no fertilizer is used.

Ragweed Infestations Increase in East Oregon

SALEM, ORE. — After surveying ragweed infestations in eight eastern Oregon counties this summer, the Oregon Department of Agriculture estimates there is now a total of 18,905 infested acres in this area. This is an increase of between 5,500 and 6,000 acres since the last survey.

George Moose, supervisor of the program for the department, estimates total infested area in Hood River county is 1,500 acres. Apple, pear and cherry orchards are infested, he said, as well as pastures, sod waterways and other drainage ways leading directly into the Hood River. Infestations were also noted along the highways in scattered spots near the town of Hood River.

Wasco and Gilliam counties appeared to have no infestations along the main highways, Mr. Moose said. Morrow County has a small infestation extending from the Umatilla County line near Irrigon for about four miles west along highway 730. Road shoulders, pastures and waste areas have the heaviest infestations.

Previously, Umatilla County was estimated to contain 13,000 acres infested with ragweed in three locations—the Milton-Freewater area, a small area along U.S. 395 near McKay Dam, and an area in the western part of the county adjoining the Morrow County line along state highway 730. Additional areas found this year raise the total estimate to 17,000 acres in Umatilla County.

Mr. Moose said Umatilla infestations have spread or new infestations have been located along U.S. 30 at the Stanfield-Echo junction and west to include the irrigated corn and pasture on the "Stanfield Flats."

Additional infestations were noted along U.S. 395 from Pendleton in scattered spots to "Camas prairie" near Ukiah, on highway 11 from Pendleton to the Washington state line and along tributaries to the Umatilla River.

In 1957 the Oregon Legislature enacted a law making 18 counties in western Oregon a ragweed control area, and set up a $50,000 fund to find and spray ragweed on private lands in these counties. No provisions were made for control of ragweed in eastern Oregon.

To Try Soil Fertility Plan In 25 More Georgia Counties

WASHINGTON—Georgia's intensified soil fertility program is being expanded during 1958-59 to 25 additional counties, following the success of a pilot project in six counties during 1957-58. The National Plant Food Institute, through its Southeastern regional office, will help support the program which is being conducted by the Georgia Agricultural Extension Service.

This year's pilot project was designed to test techniques and evaluate the effectiveness of an intensified educational campaign upon Georgia farmers. "Teamwork in Action" was the key feature of the project in which all segments of each local community cooperated, including agricultural workers, bankers, merchants, farm organizations, churches, newspapers, radio and television, civic groups and others. Additional support and assistance were provided by the Georgia Plant Food Educational Society. (A full report on the results of the program in the original six counties appears on page 9.)

Enos Valliant to Head Northeast Regional Group

MELVIN VILLAGE, N.H. — Enos Valliant of the Dorchester Fertilizer Co. in Cambridge, Md., was elected chairman of the Northeast Regional Industry Advisory Committee of the National Plant Food Institute.

The group met here Sept. 24, at the Bald Peak Colony Club.

Some of the results of the meeting included:

- Two new committee members were nominated.
- A region-wide-fertilizer conference for members of the NPFI from Maine to Virginia was decided upon. The meeting will take place in September, 1959 and Graham Campbell, R. R. Hull and W. H. Garman were appointed to the committee to select a site.
- Recent developments in soil testing were reviewed and recommendations that more attention be given to administration of soil testing programs were made.
- It was recommended that the NPFI's efforts in the northeast U.S. be chiefly concerned with education and promotion plus some attention to research on fertilizer economics.
- The group recommended that an educational news service be established for the various communications media.
- Recommendations were made that certain counties previously surveyed by National Analysts, Inc. in the study of "Farmers' Attitudes Toward the Use of Fertilizer" be resurveyed to determine the effect of more recent promotional programs on farmers' attitudes.
- A meeting of the committee was set up for the first two weeks of January, 1959.
- A new committee member selection method was set up.

CALIFORNIA FARM STORE

CARUTHERS, CAL.—A new garden and farm supplies store, handling a variety of fertilizer, seed and agricultural chemicals, opened here recently. Owners of the store are Otis and Wilburn O. Cowin.

The Versatile Fungicide

You get so many advantages with Copper fungicides–used as a spray or dust on practically all truck crops in the control of persistent fungus diseases–Tri-Basic provides control of citrus and grape diseases, also on many deciduous fruits–Tri-Basic has excellent adherence qualities and protects longer–lower disease control cost, greater yield of top quality produce.

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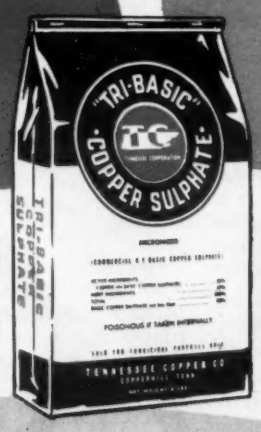

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Upgrades Quality of Fruits & Vegetables	Economical Longer Shelf Life	Compatible Plentiful Supply

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Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

October Program Points to Fertilizer Plant Safety

AN OPPORTUNITY for fertilizer manufacturers to gain pertinent information about the importance of safety in plants and how it may be achieved is open to everyone in the trade when the annual industry safety conference is held later this month in Chicago. The program for the two-day sessions, Oct. 20-21, promises to be of practical nature, one which will give its hearers numerous ideas that may be taken home and put to work.

The very complexity of fertilizer manufacturing calls for more attention to safety and a greater consciousness of its need. Most of the talks and discussions on the program will point in this direction.

The "accident-prone" individual will be discussed; safe practices in handling ammonia and nitrogen solutions are to be described, and a panel presentation of case histories of accidents in plants will be another feature well worth the time and effort to attend.

Nor will the discussions be limited to formal speakers on the program. A "brainstorming" session is scheduled during one period, where anyone with ideas on how safety might be achieved, is urged to express himself. Informal small-group discussions of specific problems in the industry will be possible at various times, and the interchange of ideas with other fertilizer manufacturers pays big dividends.

It would be trite to point out here the importance of greater safety in fertilizer plants. The improvement of the industry's accident record results in lower insurance rates and more efficiency in production.

Business Horizons Expand In Unpredictable Directions

HOW BIG is a "potential"? Pesticide tradesmen look out over the agricultural scene, weigh the factors affecting the sale and use of insecticides, weed killers, and fungicides and make their predictions accordingly. In similar manner, the fertilizer industry makes a study of the acres to be planted to certain crops, considers the economic climate in general, and comes up with a "potential" figure.

Sometimes the horizon appears larger than it really is, and sometimes smaller. An executive of a western company made some thoughtful comments upon his retirement recently. Some of his observations appear significant to the trade, even though his particular firm was not in the agricultural chemical business.

"Although we now do more business in a single month than we did in an entire year when I joined the company, there is continually more room for growth and expansion. Horizons keep broadening as a company grows larger," he said.

"I recall, back when we were doing about $18 million worth of business, we felt that perhaps $25 million would be as large as we'd ever get. Today, we're more than four times that large. Yet, the larger we get, the greater the opportunities for further expansion."

Such a valedictory gives a sense of perspective to industry leaders still hard at work and whose responsibility it is to look ahead and plan for expanded areas of service. One doesn't have to wait until retirement time to catch the idea that markets keep on expanding, and that new products and new uses for them are always on tap.

The developments in the field of chemicals for agriculture have been great during the past 10 or 12 years, but there remain great opportunities for expansion in the years ahead. Perspective and vision are essential in all progress, but particularly so in the feld of pesticides and fertilizers.

Better Farm Income Should Mean Increased Tonnage

FARMERS' realized net income in the first three quarters of 1958 has been estimated by the Agricultural Marketing Service of the U.S. Department of Agriculture, as being at an annual rate of about $13 billion, which is some 19% more than in the same period of 1957. The increase resulted from higher average prices, increased marketings, and larger soil bank payments which more than offset a further gain in production expenses.

What does this mean to the fertilizer and pesticide industries? While no one has all of the answers, it is manifest that the increased income will not make farmers particularly gloomy about 1959, nor is it likely to cause a general tightening up of purse strings when it comes to planning for purchases of plant food and of materials for pest control.

Many factors enter into the total picture, of course. Among these are credit, lower support prices and, naturally enough, the weather. In his Washington report last week, John Cipperly, Croplife correspondent, observed that fertilizer manufacturers and dealers are generally the ones who extend credit for farmer purchases, and that prospects for next year are such that the plant food user should have little trouble buying materials he needs.

Lower support prices are expected to encourage growers to produce more to the acre so they can come out favorably profit-wise at the end of the season. This must refer both to fertilizers and to pesticides. The latter argument is based on the premise that not many growers will be willing to put cash and effort into giving a crop a good start, only to have it destroyed by plant diseases or insects.

Publicity pointing out that farmers are realizing more profit is likely to dispel the rather heavy gloom that tended to pervade the agricultural scene for so many months. It is an opportunity for sales action, to which the trade will be alert both this fall and during subsequent months. Next year's tonnage records should reflect the improved situation.

Canadian Convention Hears Familiar Pesticide Story

SOME of the problems faced by manufacturers of pesticides in Canada were outlined in a talk by one of the speakers on the program of the recent meeting of the Western Agricultural Chemicals Assn. in Winnipeg. Points made in the address could well be noted by American manufacturers.

Of $21 million worth of pesticides distributed annually in Canada, only a small portion is manufactured there, it was emphasized. The Canadian manufacturer shares the market on tariff-free products coming in from "other countries," the audience was reminded, and the suggestion made that "some measure of tariff protection would have a favorable effect on the production of agricultural chemicals in Canada."

Both production of pesticides and research in the field are limited by serious inventory problems caused by the widely separated markets and the seasonal nature of demand for various pesticides, the convention was told.

Sounds familiar. Manufacturers and formulators in the U.S. recognize what their Canadian friends are talking about, and are perfectly willing to continue serving this northern market with insecticides, weed killers, fungicides, and plant growth regulants.

Croplife's Home Office

Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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MEETING MEMOS

Nov. 12-13 — Chemical Market Research Assn. convention, Hotel St. Paul, St. Paul, Minn.

Nov. 25—Eighth Semi-Annual Meeting and Winter Conference, Manufacturing Chemists' Assn., Hotel Statler, New York.

1959

Jan. 12-13—Ohio Pesticide Institute, annual winter meeting, Neil House, Columbus, Ohio. J. D. Wilson, Secretary, Agricultural Experiment Station, Wooster, Ohio.

Jan. 21-22—Northwest Agricultural Chemicals Industry Conference, Benson Hotel, Portland, Ore.; George Kitzmiller, Pacific Cooperatives, Portland, conference chairman.

Meeting Memos listed above are being listed in this department this week for the first time.

Oct. 13—Agricultural Research Institute Panel on Problems Related to Agriculture in the Fertilizer Producing Industry, Academy of Science Bldg., Washington, D.C.

Oct. 13-15 — Association of Official Agricultural Chemists, Shoreham Hotel, Washington, D.C.

Oct. 14-15 — Western Agricultural Chemicals Assn., Annual Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

Oct. 16—National Plant Food Institute Conference on Chemical Control Problems; Shoreham Hotel, Washington, D.C.

Oct. 17 — Association of American Fertilizer Control Officials, 12th Annual Meeting, Shoreham Hotel, Washington, D.C., B. D. Cloaninger, Box 392, Clemson, S.C., Secretary-Treasurer.

Oct. 19-22—Soil Conservation Society of America, 13th Annual Meeting, City Auditorium, Asheville, N.C.

Oct. 20—Annual Sales Clinic of Salesmen's Assn. of the American Chemical Industry, Inc., Roosevelt Hotel, New York.

Oct. 20-21—Fertilizer Section, National Safety Council, annual fall meeting, La Salle Hotel, Chicago, Ill.

Oct. 21-24—Stored Grain Insect Control Conference, Kansas State College, Manhattan, Kansas.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

Oct. 27 — Western Range Fertilization Conference, Riverview Country Club, Redding, Cal.

Oct. 27-30—The American Forestry Assn., 83rd Annual Meeting, Gearhart, Ore.

Oct. 28-29 — American Society of Range Management Meeting, Riverview Country Club, Redding, Cal.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-30—Annual Southeastern Soil Fertility Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Oct. 29-31 — National Agricultural Chemicals Assn., 25th annual meeting, General Oglethorpe Hotel, Savannah, Ga.

Nov. 5-7—Fertilizer Industry Round Table, Mayflower Hotel, Washington, D.C.

Nov. 9-11—California Fertilizer Assn., 35th Annual Convention, Ambassador Hotel, Los Angeles, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

Nov. 10-11 — Agricultural Aviation Research Conference, Milwaukee.

Nov. 11-13—New York State Insecticide and Fungicide Conference, 20th Annual Meeting; and 11th Annual Pesticide Application Equipment Conference, Bibbins Hall, Cornell University, Ithaca, N.Y.

Nov. 18-20—Washington State Weed Conference, Moses Lake, Wash.

Nov. 19-20—Carolinas-Virginia Pesticide Formulators' Assn., Carolina Hotel, Pinehurst, N.C.

Nov. 16-18—National Fertilizer Solutions Assn., Netherland Hilton Hotel, Cincinnati, M. F. Collie, 2217 Tribune Tower, Chicago, Executive Secretary.

Nov. 24-25—Entomological Society of America, Eastern Branch, Annual Meeting, Lord Baltimore Hotel, Baltimore.

Dec. 1-4—Entomological Society of America, Annual Meeting, Hotel Utah, Salt Lake City.

Dec. 3-4—North Central Weed Control Conference, Netherland Hilton Hotel, Cincinnati.

Dec. 3-4—Annual Soil Fertility and Plant Nutrition Short Course, University of Missouri, College of Agriculture, Columbia, Mo.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Dec. 8—Annual Soils and Fertilizer Short Course, Coffey Hall, University of Minnesota Institute of Agriculture, St. Paul.

Dec. 8-10—Chemical Specialties Manufacturers Assn., Annual Meeting, Commodore Hotel, New York.

Dec. 17-18—Beltwide Cotton Production Conference, Rice Hotel, Houston, Texas, sponsored by the National Cotton Council.

1959

Jan. 7-9—Thirteenth Annual Northeastern Weed Control Conference, Hotel New Yorker, New York.

Jan. 20-22—California Weed Conference, Santa Barbara, Cal.

Jan. 22-24 — Agricultural Aircraft Assn., Senator Hotel, Sacramento, Cal.; Wanda Branstetter, Chandler Field, Fresno, Cal., Executive Secretary.

July 7-9 — Pacific Northwest Plant Food Assn., 10th Annual Regional Fertilizer Conerence, Tacoma, Wash.

CALENDAR FOR 1958-59

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St. Regis Expands Multiwall Plant At Kansas City

NEW YORK—St. Regis Paper Co. recently celebrated the expansion and modernization of its multiwall bag plant at Kansas City with an open house. Opened in June of 1956, the plant was equipped originally only to manufacture sewn multiwalls. Now, with a new stepped-end machine and expansion in the engraving, printing, sewing and shipping departments, St. Regis can manufacture pasted open mouth and valve bags, plus the new stepped-end bags.

The new machine, considered one of the most modern in the industry, was designed and built to make St. Regis' stepped-end bags in a wide variety of sizes for the individual needs of many different multiwall customers in such industries as flour, feed and fertilizer.

The stepped-end bag pioneered by St. Regis has an overlapping ply construction for added strength and flexibility. A more positive closure also provides increased siftproofness.

In addition to the stepped-end bag machine, St. Regis installed new engraving, printing and sewing equipment. A new printing press has been added to the plant's printing facilities and an older one has been modernized. A new vulcanizing machine for making the plates for printing the multiwall bags has been added in the engraving department.

The latest St. Regis valving and sewing equipment has been installed, replacing the original equipment. Tubers have been modernized and rebuilt and spot paste units and forming tables added. New bundling presses and pallet presses have been installed in the shipping department to facilitate handling. The railroad siding has been expanded to handle 10 freight cars at one time, and the truck dock can now handle eight truck trailers at one time.

The machine shop at the plant has been completely equipped to handle repairs and maintenance of the expanded facilities. Also, the various manufacturing departments have been relocated and the offices modernized for the most efficient operation. The plant now has approximately 105,000 sq. ft. of floor space.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $11 per column inch.

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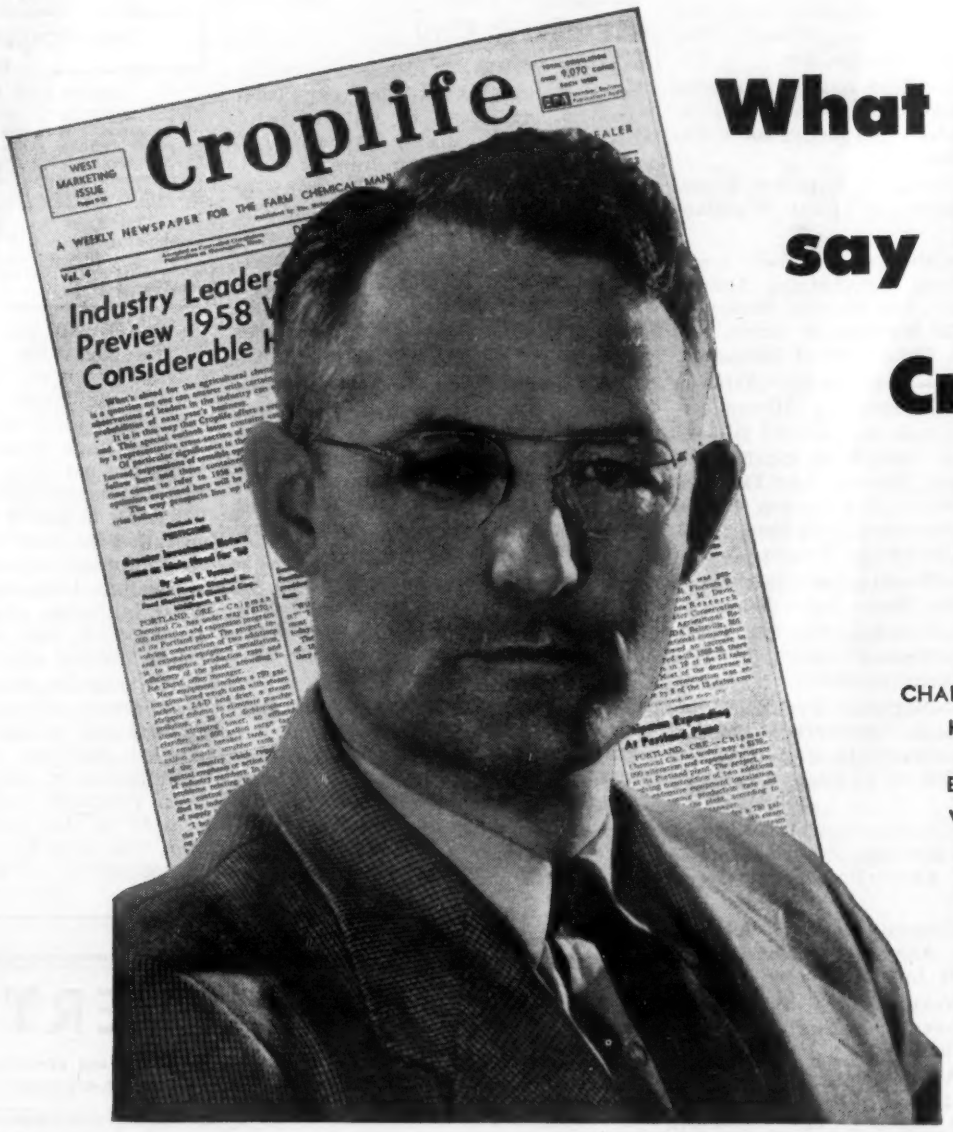

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CHARLES L. HOVEY
Head of Agricultural Chemicals Research
Eastern States Farmers' Exchange
West Springfield, Mass.
A Farmers' Cooperative Purchasing Association

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